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TECHNICAL DOCUMENTATION AND INSTRUCTIONS FOR USE
Miami Affordability Project | MAP
July 2023

Overview

The Miami Affordability Project (MAP) is an interactive online map providing data on the distribution of affordable housing, housing needs, demographic profiles, and environmental resiliency in greater Miami. The intent is to provide an open-access tool for planners, developers, community groups, climate policy professionals, scholars of urban issues and anyone else interested in equitable community development to better understand local housing needs and encourage data-driven affordable housing planning and analysis.

This technical documentation is for the fourth phase of MAP and will be updated as we complete future iterations of this tool with expanded functionality and additional and updated data. This most recent update expands on MAP's affordable housing and urban resilience content to offer data showing the relationship between housing and heat in order to provide a more complete understanding of Miami's built context, history of racialized planning practices, and environmental challenges. You can view the following storymap to learn how to use some of MAP's features.

MAP was created by the University of Miami's Office of Civic and Community Engagement and supported by JPMorgan Chase, with additional support from the Jessie Ball duPont Fund. Software development is by the University of Miami's Institute for Data Science and Computing.

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How the MAP platform works

The platform features nine different data categories— Subsidized Housing, Demographics, Boundaries, Communities, Section 8 Data, Historic Properties and Redlining, and Natural Environment and Climate —represented as layers. These layers can be turned on or off as part of the visual display, altered by their level of opacity, and filtered for analysis.

- **SUBSIDIZED HOUSING** - Housing and demographic data at the census-tract level
    - Assisted Housing encompasses developments that received a subsidy (federal, state, or local) for the construction or rehabilitation of the unit. These developments have requirements for the level of affordability for the units
    - Public Housing is a property managed by a public housing authority

- **DEMOGRAPHICS –** An expansive demographics dataset that includes American Community Survey data, alongside data such as household access to air conditioning, energy burden, outdoor workers, and automobile ownership all at the census-tract level

- **HEALTH-** Data related to the health impacts of heat, in whatever forms are available. This includes Florida Department of Health data on heat hospitalizations, as well as CDC data for asthma and COPD

- **BOUNDARIES**- Local municipal boundaries, from Commission Districts to Community Redevelopment Areas

- **COMMUNITIES**- Parcel-level data including lot size, land use, and ownership information for several neighborhoods in Miami

- **SECTION 8 DATA**- Data on Miami-Dade County's Section 8 Housing Choice Voucher Program

- **HISTORIC PROPERTIES AND REDLINING -** Contains data on historic properties in Miami as well as   Home Owner's Loan Corporation maps grading neighborhoods by mortgage investment risk

- **NATURAL ENVIRONMENT AND CLIMATE –** A broad dataset related to impervious surfaces, tree canopy, ground elevation, FEMA flood zones, sea-level rise projections, storm surge projections, surface temperature and heat,

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Basic Functionality

Through the **Layers** tab at the top left of the screen, users can display available data categories.

Click on a tab (Subsidized Housing, Demographics, Health, Boundaries, Communities, Section 8 Data, Historic Properties and Redlining, and Natural Environment and Climate) to display the selection options available for that dataset. The layers of each dataset have built-in explanations in their "**i**" button, which you can view by hovering over the icon. For additional layer explanations, the Appendices sections of this document provide sources and explanations for the data layers found in MAP.

To display features (e.g., affordable housing developments, census tracts or parcels, municipal boundaries, flood zone, etc.), activate a filter either by checking the radio button or check box next to the layer, and the map will automatically update to show the selected criteria. Some data will be represented as single points, such as affordable housing; other layers will be shown within the bounds of county census tracts. Additional layers may be seen in raster or digital elevation models. Further modifications to a selected data point can be made directly within the list of options and the map will automatically update. Certain layers, such as neighborhoods, give you the option to center the camera view on them by clicking the "eye" icon that appears to the layer's right. Layers that are not displayed as a single point can have their opacity toggled in their respective legend boxes, so as to better allow multiple layers at once.

To clear the data on one or several layers to begin a new search, click the "Clear Map" option at the top of the layer field. If multiple layers are selected but you would like to clear only a single layer, you can click the clear-layer button at the top of every MAP category to clear that category's layers. While the Office of Civic and Community Engagement strives to allow users to represent numerous data sets in conjunction with each other, please note that displaying too many layers at once may negatively impact MAP legibility.

To view the attributes of a particular feature, click the feature on the map and a pop-up box will appear, displaying all available data for that feature. The X at the top-right of the pop-up box will return you to layer-view.

To reset the map to its default state with no filters or data categories activated, click the "clear map" button located on the vertical menu on the left side of the interface.

Datasets and Layers

All the datasets were compiled from publicly available data sources. The data is provided here as a public service; charging for its use, or redistribution without permission, is prohibited.

Subsidized Housing

The Subsidized Housing Layer consists of two principal datasets - Assisted Housing and Public Housing. Assisted Housing developments include all subsidized multi-family rental housing in South Florida. This encompasses all the units that received a subsidy, whether federal, state, or local, for the construction or rehabilitation of the unit(s) and which have requirements or regulations that determine the level of affordability of the units. Project-based Section 8 units could be included in this data. The dataset was compiled from two principal sources: *University of Florida's Shimberg Center for Housing Studies and Miami-Dade County's* Department of Public Housing and Community Development (PHCD). Additional data came from the *Florida Housing Finance Corporation, Miami-Dade County Property Appraiser, the City of Miami Community and Economic Development Department, and the Miami-Dade County PHCD's Housing Affordability Tracker*, created in collaboration with CCE.

To create the Assisted Housing dataset, the datasets were merged, and developments were matched based on name and address. Year Built and Owner information were crosschecked with the Property Appraiser's dataset based on address. Since each dataset included different types of information, only those developments that appeared in each dataset have all the available data. Those that only appeared in one or two datasets are therefore incomplete. In some cases, data were incomplete within a dataset, and in some cases, there may be errors. We attempted to resolve discrepancies that appeared in certain cases but did not attempt to verify all the information in each dataset. Therefore, users should take caution and verify any information related to a particular development of interest. More detailed information about this data source is available in Appendix A.

Shimberg Center for Housing Studies at the University of Florida

The Shimberg Center for Housing Studies at the University of Florida maintains a clearinghouse for data on housing affordability. The Center compiles data from HUD, Florida Housing Finance Corporation, and local housing authorities, and provides it in Excel spreadsheets for download through their website. The data used for this map is updated annually and includes all rental units funded through HUD mortgage assistance and rental assistance, Section 8 project-based units, Low-Income Housing Tax Credits, state HOME, SAIL, and Local Housing Finance Authority bonds. The data in MAP from the Shimberg Center was downloaded in August 2020.

Miami-Dade County Public Housing and Community Development Department

Miami-Dade County funds the development and rehabilitation of rental units through its HUD entitlement funds (CDBG, HOME, U.S. Department of Agriculture Rural Development (RD) Multifamily, and NSP) as well as through its own Documentary Surtax Program. The data available in this layer include the type of project, the type of funding source, and the funding amount. The Public Housing dataset contains all the housing developments publicly owned and operated by Miami-Dade County. The data also includes projects documented in the Housing Affordability Tracker. This tool was created by the University of Miami's Office of Civic and Community Engagement (CCE) in collaboration with PHCD to track progress towards developing its goals of significant investment towards developing workforce housing units.

Demographics

The Demographics Layer contains data maps and filters at the census tract–level that help inform neighborhood analysis. The housing, demographic, and housing cost data is from the American Community Survey (ACS), which is an annual survey of households conducted by the U.S. Census Bureau and is the most complete source for demographic information in the United States.

Five-year averaged data is the most reliable for small geographies, so tract-level data were downloaded from the earliest available 2020 5-year ACS estimates. A complete list of indicators and sources is available in Appendix B.

Health

The Health Layer is a MAP 4.0 dataset addition containing layers that detail heat-related health. This includes Florida Department of Health data on heat hospitalizations, as well as CDC data for asthma and COPD. Where it exists, Heat injury is often underreported or diagnosed as a separate issue, such as heart problems. More data can be found in Appendix C.

Boundaries

The Boundaries Layer contains local government boundaries for Miami-Dade County, including all of Miami's 34 municipalities, 13 Miami-Dade County Commission Districts, 5 City of Miami Commission Districts, and 14 Community Redevelopment Areas. Boundaries were downloaded from the Miami-Dade County GIS portal in August 2019. A complete list of indicators and sources is available in Appendix D.

Communities

The Communities Layer provides information about property ownership and land use at a neighborhood level. The Miami-Dade County Property Appraiser maintains a database

of all parcels in the county including lot size, land use, and ownership information. The Communities Layer was constructed by merging parcel boundaries downloaded from the Miami-Dade County Geographic Information Systems (GIS) Open Data portal with data from the Florida Department of Revenue, which tracks ownership information and is the central data source for the Miami Dade Property Appraiser.

The parcels data in MAP is current as of July 2020; users should verify information for any particular property by visiting the Miami-Dade County Property Appraiser website. The method for determining neighborhood boundaries varies by neighborhood. MAP contains selectable parcel-level data for Liberty City, Little Haiti, Overtown, Allapattah, Little Havana, Miami Gardens, and South Dade. A complete list of indicators and sources is available in Appendix E.

Section 8 Data

The Section 8 Layer contains Section 8 data at the census block level for Miami-Dade County. The Section 8 information was provided by Miami-Dade County's PHCD and is current as of May 2020. A complete list of indicators and sources is available in Appendix F.

Historic Properties and Redlining

The Historic Layer contains a list of historically significant sites throughout Miami, including Liberty City, Little Haiti, Overtown and other neighborhoods. The data was compiled from the City of Miami Historic Preservation Office and the Miami-Dade County Property Appraiser. MAP 4.0 adds historic redlining boundaries drawn by the Home Owners Loan Corporation (HOLC) that were used to grade neighborhoods by investment worthiness and led to a history of discrimination and disinvestment in minority communities. A complete list of indicators and sources is available in Appendix G.

Natural Environment and Climate

The Natural Environment and Climate Layer contains a series of datasets that showcase the current flood risk of Miami-Dade County and allow users to understand the projected impacts of sea-level rise and other climate-related risks on the county's affordable housing stock. MAP 4.0 adds heat-related data for Miami-Dade County, including surface temperature and tree-canopy coverage.

The Elevation dataset, acquired from the Miami-Dade County Open Data Hub, illustrates the ground elevation of properties in the county with a geographic reference to the North American Vertical Datum of 1988 (NAVD88). It is a digital elevation map (DEM) created by the United States Geological Survey (USGS) at a resolution of 5x5-foot grids created using light detection and ranging (LiDAR) technology.

The FEMA Flood Zones display areas of the county that have been designated most vulnerable to flooding in projected 100 and 500-year storm events by the Federal Emergency Management Agency (FEMA). The Special Flood Hazard Area (SFHA) is comprised of "A" and "V" flood zones and is defined as the area that could be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year (also referred to as 100-year storm). "A" zones are typically mapped at lower elevations and have a 1% annual chance of flooding. "V" flood zones also have a 1% annual chance of flooding and are mapped along coastlines putting them at additional risk of storm waves. The "X" shaded areas have a low to moderate chance of flooding (.2%, or 500-year storm). The dataset was created by FEMA and was acquired through Miami-Dade County Open Data Hub.

The Sea Level Rise (SLR) layer illustrates the projected increase of the sea surface level as a consequence of global warming over the next 100 years. The inundated areas represent locations where ground elevation would fall below projected sea levels. The projections were created with data from the Southeast Florida Regional Climate Change Compact's 2019 Unified Sea Level Rise Projections, using the projected high curve estimates of sea-level rise and the tidal datum and mean higher-high water (MHHW) as acquired from NOAA. The SLR and MHHW values are referenced to NAVD88. The Storm Surge level projections were estimated based on the path of Hurricane Andrew in 1992 to display the impact of a similar weather phenomenon if it were to occur at present and future sea level heights. Original surge values were collected from NOAA with a reference of surge heights to NAVD88. A complete list of indicators and sources is available in Appendix H.

Appendix A: Subsidized Housing Dataset

Development Type	Type of development
Development Name	Name of the development
Street Address	Street address of property
City	City
Zip Code	Zip Code
Elevation(ft.)	Number of feet the building is above sea level
FEMA Flood Zones	FEMA Flood Zone (X, A, V) the development is located in, if available
Housing Program(s)	All funding programs
Funding Source	Funding agencies
Total Units	Total number of units in development
Assisted Units	Number of units with rent and/or income restrictions
Workforce Units	Number of units with workforce-adjusted rent and/or income restrictions
Population Served	Populations served
Affordability Start Date	Year beginning affordability restrictions
Year Built	Year structure was built/finished
Overall Year of Subsidy Expiration	Latest expiration date of all funding program restrictions
Developer Information	Name, address and phone number of developer
Owner Type	Owner corporation type (non-profit, for-profit, etc.)
Owner Information	Name, address and phone number of owner
<=35% AMI Units	Units available for tenants at <=35% of the Area Median Income
40-50% AMI Units	Units available for tenants at 40-50% of the Area Median Income
55-60% AMI Units	Units available for tenants at 55-60% of the Area Median Income
65-80% AMI Units	Units available for tenants at 65-80% of the Area Median Income
>80% AMI Units	Units available for tenants at >80% of the Area Median Income
0 BR Rent	Average rent for a 0-bedroom unit
1 BR Rent	Average rent for a 1-bedroom unit
2 BR Rent	Average rent for a 2-bedroom unit

3 BR Rent	Average rent for a 3-bedroom unit
4+ BR Rent	Average rent for a 4-bedroom unit

Appendix B: Demographics Dataset[1]
I. Heat Related Life Demographic Experience

Access to Air Conditioning	Total number of households with air conditioning. Calculated using values from Table DP05_0086E
Percent Access to Air Conditioning	The percentage of households with air conditioning. Calculated using values from Table DP05_0086PE
Access to Transportation	Number of persons in a census tract without access to an automobile Table DP04_0058E
Access to Transportation	Percentage of persons in a census tract without access to an automobile Table DP04_0058E
Household Energy Burden	The burden of energy costs on households, used as a proxy for ability to pay for air-conditioning. Calculated by the energy.gov LEAD tool.
Outdoor Workers	Percentage of workers by tract employed in an outdoor profession Table S2401

[1] Adapted from the American Community Survey 2020 Subject Definitions.

II. Census Tracts: Demographic Characteristics Data Fields
Date of Last Collection: 2020-ACS-5-Year-Estimates

Total Population	Total population of the selected area. Calculated using values from Table DP05_0001E
Hispanic Population	Number of persons who self-identify as any race of Hispanic or Latino origin. Calculated using values from Table DP05_0071E
% Hispanic Population	Number of persons who self-identify as any race of and Hispanic or Latino origin, divided by the total population. Calculated using values from Table DP05_0071PE
White Population	Number of persons who self-identify as solely White. Calculated using values from Table DP05_0077E
% White Population	Number of persons who identify as solely White or Caucasian, divided by the total population. Calculated using values from Table DP05_0077PE
Black Population	Number of persons who identify solely as Black or African American. Calculated using values from Table DP05_0078E
% Black Population	Number of persons who identify solely as Black or African American, divided by the total population. Calculated using values from Table DP05_0078PE
Foreign Born	Number of persons who were not either a US citizen or a US national at birth. Calculated using values from Table DP02_0093E
% Foreign Born	Number of persons who were not either a US citizen or a US national at birth. Calculated using values from Table DP02_0093PE
Number Persons with Disabilities	Number of persons who report any one of the six disability types. Calculated using values from Table DP02_0072E. • Hearing difficulty - deaf or having serious difficulty hearing (DEAR). • Vision difficulty - blind or having serious difficulty seeing, even when wearing glasses (DEYE). • Cognitive difficulty - Because of a physical, mental, or emotional problem, having difficulty remembering, concentrating, or making decisions (DREM). • Ambulatory difficulty - Having serious difficulty walking or climbing stairs (DPHY). • Self-care difficulty - Having difficulty bathing or dressing (DDRS).

	• Independent living difficulty - Because of a physical, mental, or emotional problem, having difficulty doing errands alone such as visiting a doctor's office or shopping (DOUT).
% Number Persons with Disabilities	Number of persons who report anyone of the six disability types, divided by the population. Calculated using values from Table DP02_0072PE
Number of Households with Someone 65 or Over	Number of households with at least one member 65 years old or older. Calculated using values from Table DP02_0015E
% Number of Households with Someone 65 or Over	Number of households with at least one member 65 years old or older divided by the total number of households. Calculated using values from Table DP02_0015PE
Number of Households with Someone 18 or Under	Number of households with at least one member 18 years or younger. Calculated using values from Table DP02_0014E
% Number of Households with Someone 18 or Under	Number of households with at least one member 18 years or younger divided by the total number of households. Calculated using values from Table DP02_0014PE
Number of Limited English-Speaking Households	Number of households in which no one 14 and over speaks English only, or speaks a language other than English at home and speaks English "very well.". Calculated using values from Table S1601_C05_022E
% Number of Limited English-Speaking Households	Number of households in which no one 14 and over speaks English only, or speaks a language other than English at home and speaks English "very well," divided by total number of households. Calculated using values from Table S1601_C05_022PE
Number of Households with Income Less than $15,000 Per Year	Number of households with income less than $15,000 in the past 12 months, including wage or salary income; net self-employment income; interest, dividends, or net rental or royalty income or income from estates and trusts; Social Security or Railroad Retirement income; Supplemental Security Income (SSI); public assistance or welfare payments; retirement, survivor, or disability pensions; and all other income (in 2019 inflation-adjusted dollars). This is an aggregate of households making less than $10,000 and the ones making $10,000 and $14,999. Calculated using values from Table DP03_(0052E-0053E)

% Number of Households with Income Less than $15,000 Per Year	Percentage of households with income less than $15,000. Calculated using values from Tables DP03_(0052PE-0053PE)
Number of Households with Income $15,000 to $34,999 Per Year	Number of households with income $15,000 - $34,999 in the past 12 months, including wage or salary income; net self-employment income; interest, dividends, or net rental or royalty income or income from estates and trusts; Social Security or Railroad Retirement income; Supplemental Security Income (SSI); public assistance or welfare payments; retirement, survivor, or disability pensions; and all other income (in 2019 inflation-adjusted dollars). Calculated using values from Tables DP03_(0054E- 0055E)
% Number of Households with Income $15,000 to $34,999 Per Year	Percentage of households with income $15,000 - $34,999. Calculated using values from Table DP03_ (0054PE- 0055PE)
Number of Households with Income $35,000 to $49,999 Per Year	Number of households with income $35,000 - $49,999 in the past 12 months, including wage or salary income; net self-employment income; interest, dividends, or net rental or royalty income or income from estates and trusts; Social Security or Railroad Retirement income; Supplemental Security Income (SSI); public assistance or welfare payments; retirement, survivor, or disability pensions; and all other income (in 2019 inflation-adjusted dollars). Calculated using values from Table DP03_0056E
% Number of Households with Income $35,000 to $49,999 Per Year	Percentage of households with income $35,000 - $49,999. Calculated using values from Table DP03_0056PE
% Persons Living Below Poverty Line	Percentage of persons whose incomes for the last 12 months are below the poverty line, when compared to that person's family size and composition. Calculated using values from Table DP03_0119PE
Median Household Income	Median household income in the past 12 months (in 2019 inflation-adjusted dollars). Calculated using values from Table B19013_001E
Aggregate Household Income	Sum of household income for all households in the past 12 months in the selected area (in 2019 inflation-adjusted dollars). Calculated using values from Table B19025_001E

III. Census Tracts: Housing Characteristics Data Fields

Total Housing Units	Total number of houses, apartments, mobile homes, or single rooms as separate living quarters. Calculated using values from Table DP05_0086E
Occupied Housing Units	A housing unit that is the current place of residence of the people living in at the time of interview, or if the occupants are absent for a <2-month gap. Calculated using values from Table DP04_0045E
% Occupied Housing Units	Percent of housing units that are the current place of residence of the people living in at the time of interview, or whose occupants are absent for a <2-month gap. Calculated using values from Table DP04_0045PE
Owner Occupied Housing Units	Number of housing units which are occupied by the unit owner, co-owner, or mortgage holder. Calculated using values from Table B25106_002E
% Owner Occupied Housing Units	Percent of total housing units which are occupied by the unit owner, co-owner, or mortgage holder. Calculated using values from Table B25106_002PE
Renter Occupied Housing Units	Number of units occupied by non-owners, whether they are rented or occupied without rent. Calculated using values from Table B25106_024E
% Renter Occupied Housing Units	Percent of total units occupied by non-owners, whether they are rented or occupied without rent. Calculated using values from Table B25106_024PE
Vacant Housing Units	Number of units that are unoccupied at the time of interview. Units occupied at the time of interview by persons staying <2 months are only temporarily occupied and are considered vacant. Calculated using values from Table DP04_0003E
% Vacant Housing Units	Percentage of units that are unoccupied at the time of interview. Units occupied at the time of interview by persons staying <2 months are only temporarily occupied and are considered vacant. Calculated using values from Table DP04_0003E
Owner Occupied Housing Units with a Mortgage	Number of owner-occupied units, which are mortgaged. Calculated using values from Table DP04_0091E
% Owner Occupied Housing Units with a Mortgage	Percent of owner-occupied units, which are mortgaged. Calculated using values from Table DP04_0091PE
Overcrowded	Number of housing units occupied by more than 1 person but less than 1.6 persons per room. Obtained by dividing the number of residents in a housing unit by the number of rooms in a unit. Calculated using values from Table DP04_0078E

% Overcrowded	Percentage of housing units occupied by between 1.01 and 1.50 persons per room. Obtained by dividing the number of residents in a housing unit by the number of rooms in a unit. Calculated using values from Table DP04_0078E
Severely Overcrowded	Number of severely overcrowded housing units occupied by more than 1.5 persons per room. Obtained by dividing the number of residents in a housing unit by the number of rooms in a unit. Calculated using values from Table DP04_0079E
% Severely Overcrowded	*Number of severely overcrowded housing units occupied by more than 1.5 persons per room. Obtained by dividing the number of residents in a housing unit by the number of rooms in a unit. Calculated using values from Table DP04_0079PE*
Owner Occupied Overcrowded	Number of overcrowded (1.01-1.5 persons per room) owner-occupied housing units occupied by more than one person per room. Calculated using values from Table B25014_005E
% Owner Occupied Overcrowded	Number of overcrowded (1.01-1.5 persons per room) owner-occupied housing occupied by more than one person divided by the total number of housing units. Calculated using values from Table B25014_005PE
Renter Occupied Overcrowded	Number of overcrowded (1.01-1.5 persons per room) owner-occupied housing units occupied by more than one person per room. Calculated using values from Table B25014_011E
% Renter Occupied Overcrowded	Number of overcrowded (1.01-1.5 persons per room) owner-occupied housing occupied by more than one person divided by the total number of housing units. Calculated using values from Table B25014_011PE
Lacking Complete Plumbing Facilities	Number of occupied housing units lacking a) hot and cold running water, b) a bathtub or shower. Calculated using values from Table DP04_0073E
% Lacking Complete Plumbing Facilities	Number of occupied housing units lacking complete plumbing facilities, divided by the number of occupied housing units Calculated using values from Table DP04_0073PE
Lacking Complete Kitchen Facilities	Number of occupied housing units lacking: a) a sink with a faucet b) a stove or range, and c) a refrigerator. Calculated using values from Table DP04_0074E
% Lacking Complete Kitchen Facilities	Percentage of occupied housing units lacking: a) a sink with a faucet b) a stove or range, and c) a refrigerator. Calculated using values from Table DP04_0074PE
0 Bedrooms	Number of housing units with 0 rooms designed to be used as bedrooms. Calculated using values from Table DP04_0039E
% 0 Bedrooms	Number of housing units with 0 rooms designed to be used as bedrooms, divided by the total number of housing units. Calculated using values from Table DP04_0039PE
1 Bedroom	Number of housing units with 1 room designed to be used as a bedroom. Calculated using values from Table DP04_0040E

% 1 Bedroom	Number of housing units with 1 room designed to be used as a bedroom, divided by the total number of housing units. Calculated using values from Table DP04_0040PE
2 Bedrooms	Number of housing units with 2 rooms designed to be used as bedrooms. Calculated using values from Table DP04_0041E
% 2 Bedrooms	Number of housing units with 2 rooms designed to be used as bedrooms, divided by the total number of housing units. Calculated using values from Table DP04_0041PE
3 Bedrooms	Number of housing units with 3 rooms designed to be used as bedrooms. Calculated using values from Table DP04_0042E
% 3 Bedrooms	Number of housing units with 3 rooms designed to be used as bedrooms, divided by the total number of housing units. Calculated using values from Table DP04_0042PE
4 or More Bedrooms	Number of housing units with 4 rooms designed to be used as bedrooms. Calculated using values from Table DP04_0043E
% 4 Bedrooms	Number of housing units with 4 rooms designed to be used as bedrooms, divided by the total number of housing units. Calculated using values from Table DP04_0043PE
Median Number of Rooms	Median number of rooms derived per housing unit for all units in the selected area. Calculated using values from Table DP04_0037E
Median Year Structure Built	The median year that housing structures were built in the selected geographic area. Year-built does not take into account remodeling and only refers to when the unit was first built. Calculated using values from Table B25035_001E
% Built 2010 to present	Percentage of housing units built 2020 to present. Calculated using values from Table DP04_001(7-8)PE
Built 2010 to present	Number of housing units built 2010 to present divided by the number of housing units. Calculated using values from Table DP04_001(7-8)E
% Built 1990 to 2009	Percentage of housing units built between 1990 to 2009. Calculated using values from Table DP04_001 (19-20)PE
Built 1990 to 2009	Number of housing units built between 1990 to 2009 divided by the number of housing units. Calculated using values from Table DP04_00(19-20)E
% Built 1970 to 1989	Percentage of housing units built between 1970 and 1989. Calculated using values from Table DP04_00 (21-22)PE
Built 1970 to 1989	Number of housing units built between 1970 and 1989. Calculated using values from Table DP04_00(21-22)E
% Built 1950 to 1969	Percentage of housing units built between 1950 and 1969. Calculated using values from Table B25035. Table DP04_00(21-22)PE
Built 1950 to 1969	Number of housing units built between 1950 and 1969. Calculated using values from Table DP04_00(23-24)E
% 1940 to 1949	Percentage of housing units built between 1939 and 1949. Calculated using values from Table DP04_0025PE

Built 1940 to 1949	Number of housing units built between 1939 and 1949. Calculated using values from Table DP04_0025E
% 1939 or Earlier	Percentage of housing units built from 1939 or earlier. Calculated using values from Table DP04_0026PE
Built 1939 or Earlier	Number of housing units built from 1939 or earlier. Calculated using values from Table DP04_0026E

ɪᴠ. Census Tracts: Housing Costs Characteristics Data Fields

Median Monthly Housing Costs	The median housing costs of "selected monthly owner costs" for owner-occupied units and "gross rent" for renter occupied units. Calculated using values from Table B25105_001E
Median Household Income	Median household income[2] in the past 12 months (in 2019 inflation-adjusted dollars). Calculated using values from Table B25119_001E
Median Owner Income	Median household income in the past 12 months for owner households. Calculated using values from Table B25119_002E
Median Renter Income	Median household income in the past 12 months for renter households. Calculated using values from Table B25119_003E
Median Monthly Owner Costs	Median monthly housing costs for owner occupied units. Costs include: payment for mortgages, real estate taxes, various insurances, utilities, fuels, mobile home costs, and condominium fees. Calculated using values from Table B25088_001E
Median Monthly Renter Costs	Median monthly housing costs for renter occupied units. "Gross Rent" includes: The amount of the contract rent plus the estimated average monthly cost of utilities (electricity, gas, and water and sewer) and fuels (oil, coal, kerosene, wood, etc.) if these are paid for by the renter (or paid for the renter by someone else). Calculated using values from Table B25064_001E
Median Monthly Owner Costs as a Percentage of Household Income	Median monthly housing costs for all occupied units as a percent of household income. Calculated using values from Table B25088_001E

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[2] For accuracy, income is defined by the American Community Survey as:
"'Total income' is the sum of the amounts reported separately for wage or salary income; net self-employment income; interest, dividends, or net rental or royalty income or income from estates and trusts; Social Security or Railroad Retirement income; Supplemental Security Income (SSI); public assistance or welfare payments; retirement, survivor, or disability pensions; and all other income. Receipts from the following sources are not included as income: capital gains, money received from the sale of property (unless the recipient was engaged in the business of selling such property); the value of income "in kind" from food stamps, public housing subsidies, medical care, employer contributions for individuals, etc.; withdrawal of bank deposits; money borrowed; tax refunds; exchange of money between relatives living in the same household; gifts and lump-sum inheritances, insurance payments, and other types of lump- sum receipts."

Median Monthly Renter Costs as a Percentage of Household Income	Gross rent for all occupied units as a percent of household income. Calculated using values from Table DP04_0136E
Cost-Burdened Owner-Occupied Housing Units	Aggregate number of owner-occupied housing units paying more than 30% of income in housing cost. Calculated using values from Table B25106_0 (06-22)
% Cost-Burdened Owner-Occupied Housing Units	Number of owner-occupied housing units paying more than 30% of income in housing cost, divided by total number of owner-occupied households. Calculated using values from Table B25106_0 (06-22)
Cost-Burdened Owner-Occupied Housing Units with a Mortgage	Aggregate number of owner-occupied housing units with a mortgage paying more than 30% of income in housing cost. Calculated using values from Table DP04_(0114-0115E)
% Cost-Burdened Owner-Occupied Housing Units with a Mortgage	Number of owner-occupied housing units with a mortgage paying more than 30% of income in housing cost divided by total number of owner-occupied households Calculated using values from Table (DP04_0114-0115PE)
Cost-Burdened Owner-Occupied Housing Units without a Mortgage	Aggregate number of owner-occupied housing units with no mortgage paying more than 30% of income in housing cost. Calculated using values from Table DP04_(0123E-0124E)
% Cost-Burdened Owner-Occupied Housing Units without a Mortgage	Number of owner-occupied housing units with no mortgage paying more than 30% of income in housing cost divided by total number of owner-occupied households. Calculated using values from Table DP04_(0123E-0124PE)
Cost-Burdened Renter Housing Units	Number of renter-occupied housing units paying more than 30% of income in housing cost. Calculated using values from Table B25106_0 (28-44)
% Cost-Burdened Renter Housing Units	Number of renter-occupied housing units paying more than 30% of income in housing cost, divided by total number of renter-occupied households. Calculated using values from Table B25106_0 (28-44)

Appendix C: Health Dataset

Asthma Prevalence	CDC data displaying the crude prevalence of current asthma among adults in the year 2018
COPD Prevalence	CDC data displaying the crude prevalence of COPD among adults in the year 2018
Heat Related ER Visits	Florida Department of Health data displaying heat related emergency room visits between the years 2005 and 2020
Heat Related Hospitalizations	Florida Department of Health data displaying heat related hospitalizations between the years 2005 and 2020
Heat Related Deaths	Florida Department of Health data displaying heat related deaths between the years 2005 and 2020
Parks, Recreation, and Open Spaces	A layer sourced from Miami Dade County listing parks and outdoor recreational spaces within the county as singular points. The five-minute, ten-minute, and fifteen-minute walkability buffers estimate the amount of time it would take to walk directly to the cooling center based on the amount of distance from the buffer to the cooling center point.
Public Libraries	A layer sourced from Miami-Dade County listing public library locations within the county as singular points. The five-minute, ten-minute, and fifteen-minute walkability buffers estimate the amount of time it would take to walk directly to the cooling center based on the amount of distance from the buffer to the cooling center point.
Outreach and Emergency Shelter Providers	A layer sourced from Miami Dade County listing outreach and emergency shelter locations within the county as singular points. The five-minute, ten-minute, and fifteen-minute walkability buffers estimate the amount of time it would take to walk directly to the cooling center based on the amount of distance from the buffer to the cooling center point.

Appendix D: Boundaries Dataset

CRA Boundaries

MIDTOWN MIAMI
SOUTH MIAMI
BEACH CITY
NARANJA LAKES
7TH AVENUE CORRIDOR
FLORIDA CITY
NORTH MIAMI BEACH
WEST PERRINE
NW 79TH STREET
OPA-LOCKA
NORTH MIAMI
SOUTHEAST OVERTOWN/PARK WEST
OMNI
HOMESTEAD

Miami-Dade County Commission Districts

DISTRICT 1
DISTRICT 2
DISTRICT 3
DISTRICT 4
DISTRICT 5
DISTRICT 6
DISTRICT 7
DISTRICT 8
DISTRICT 9
DISTRICT 10
DISTRICT 11
DISTRICT 12
DISTRICT 13

City of Miami Commission Districts

DISTRICT 1
DISTRICT 2
DISTRICT 3

DISTRICT 4
DISTRICT 5

Municipalities

AVENTURA
BAL HARBOUR
BAY HARBOR ISLANDS
BISCAYNE PARK
CORAL GABLES
CUTLER BAY
DORAL
EL PORTAL
FLORIDA CITY
GOLDEN BEACH
HIALEAH
HIALEAH GARDENS
HOMESTEAD
INDIAN CREEK VILLAGE
KEY BISCAYNE
MEDLEY
MIAMI BEACH
MIAMI GARDENS
MIAMI LAKES
MIAMI SHORES
MIAMI SPRINGS
NORTH BAY VILLAGE
NORTH MIAMI
NORTH MIAMI BEACH
OPA-LOCKA
PALMETTO BAY
PINECREST
SOUTH MIAMI
SUNNY ISLES BEACH
SURFSIDE
SWEETWATER
UNINCORPORATED MIAMI-DADE
VIRGINIA GARDENS
WEST MIAMI

Appendix E: Communities Dataset

Street Address	Street address of property
City	City where property is located
Zip Code	Zip Code where property is located
Folio	Folio number assigned to the parcel by the County Appraiser
Owner	Name of owner
Mailing Address Zip Code	Zip Code of owner mailing address
Ownership	Private or publicly owned land
DOR Primary Land Use	DOR Code - Primary Land Use codes sourced from Miami Dade County's Open Data Hub
Land Use	Primary land use categories
Bedrooms	Number of bedrooms
Bathrooms	Number of bathrooms
Stories	Number of floors in the building
Living Units	Number of units in the building
Actual Size (Sq. Ft.)	Total of all measured areas within the subject property
Lot Size (Sq. Ft.)	Lot size in square feet
Year Built	Year structure was built/finished
Elevation	Number of feet above sea level
# of Units	Number of units in the building
# of Bedrooms	Number of bedrooms in unit
Flood Zone	Flood Zone Designation as defined by FEMA

Department of Revenue (DOR) - Primary Land Use Codes

66 - VACANT RESIDENTIAL: EXTRA FEA OTHER THAN PARKING
81 - VACANT RESIDENTIAL: VACANT LAND
101 - RESIDENTIAL - SINGLE FAMILY: 1 UNIT
303 - MULTIFAMILY 10 UNITS PLUS: MULTIFAMILY 3 OR MORE UNITS
407 - RESIDENTIAL - TOTAL VALUE: CONDOMINIUM - RESIDENTIAL
410 - RESIDENTIAL - TOTAL VALUE: TOWNHOUSE
508 - COOPERATIVE - RESIDENTIAL: COOPERATIVE - RESIDENTIAL
802 - MULTIFAMILY 2-9 UNITS: 2 LIVING UNITS

803 - MULTIFAMILY 2-9 UNITS: MULTIFAMILY 3 OR MORE UNITS
1066 - VACANT LAND - COMMERCIAL: EXTRA FEA OTHER THAN PARKING
1081 - VACANT LAND - COMMERCIAL: VACANT LAND
1111 - STORE: RETAIL OUTLET
1209 - MIXED USE-STORE/RESIDENTIAL: MIXED USE - RESIDENTIAL
1713 - OFFICE BUILDING - ONE STORY: OFFICE BUILDING
1913 - PROFESSIONAL SERVICE BLDG: OFFICE BUILDING
1943 - PROFESSIONAL SERVICE BLDG: HEALTH CARE
2111 - RESTAURANT OR CAFETERIA: RETAIL OUTLET
2512 - REPAIR SHOP/NON-AUTOMOTIVE: REPAIRS – NON-AUTOMOTIVE
2719 - AUTOMOTIVE OR MARINE: AUTOMOTIVE OR MARINE
2865 - PARKING LOT/MOBILE HOME PARK: PARKING LOT
3215 - ENCLOSED THEATER/AUDITORIUM: ENTERTAINMENT
4066 - VACANT LAND - INDUSTRIAL: EXTRA FEA OTHER THAN PARKING
4081 - VACANT LAND - INDUSTRIAL: VACANT LAND
4132 - LIGHT MANUFACTURING: LIGHT MFG & FOOD PROCESSING
4236 - HEAVY INDUSTRIAL: HEAVY IND OR LUMBER YARD
4731 - MINERAL PROCESSING: MINERAL PROCESSING
4837 - WAREHOUSE TERMINAL OR STG: WAREHOUSE OR STORAGE
7065 - VACANT LAND - INSTITUTIONAL: PARKING LOT
7144 - RELIGIOUS - EXEMPT: RELIGIOUS
7241 - EDUCATIONAL/SCIENTIFIC - EX: EDUCATIONAL - PRIVATE
7503 - CHARITABLE - EXEMPT: MULTIFAMILY 3 OR MORE UNITS
7742 - BENEVOLENT - EXEMPT: CLUB OR HALL - PRIVATE
7758 - BENEVOLENT - EXEMPT: YMCA - YWCA
7950 - LITERARY - EXEMPT: CULTURAL - LITERARY
8040 - VACANT GOVERNMENTAL: MUNICIPAL
8047 - VACANT GOVERNMENTAL: DADE COUNTY
8066 - VACANT GOVERNMENTAL: EXTRA FEA OTHER THAN PARKING
8080 - VACANT GOVERNMENTAL: VACANT LAND - GOVERNMENTAL
8081 - VACANT GOVERNMENTAL: VACANT LAND
8099 - VACANT GOVERNMENTAL: STATE
8348 - BOARD OF PUBLIC INSTRUCTION: BOARD OF PUBLIC INSTRUCTION
8647 - COUNTY: DADE COUNTY
8786 - STATE: TRUSTEE II FUND
8799 - STATE: STATE OF FLORIDA
8898 - FEDERAL: FEDERAL
8940 - MUNICIPAL: MUNICIPAL
9016 - LEASEHOLD INTEREST: LEASEHOLD INTEREST
9163 - UTILITY: UTILITY

9751 - PVT PARK -REC AREA -ROADWAY: COMMON AREA
9862 - CENTRALLY ASSESSED: RAILROAD ASSESSMENT
1229 - MIXED USE-STORE/RESIDENTIAL: MIXED USE - COMMERCIAL
7081 - VACANT LAND - INSTITUTIONAL: VACANT LAND
8240 - PRIVATE PARK

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Appendix F: Section 8 Datasets

Number of Section 8 Housing Units	Total number of Section 8 housing units
Average Number of Bedrooms	Average number of Section 8 bedrooms
Average Family Size	Average family size of Section 8 household
Average Contract Rent	Average contract rent
Average Monthly Payment	Average monthly tenant payment
Average Tenant Percentage of Contract Rent	Average percentage of the total tenant payment
Average Total Years in Program	Average total years in the Section 8 program
Number of Units Passing Inspection	Total number of Section 8 housing units passing inspection
Number of Units Failing Inspection	Total number of Section 8 housing units failing inspection
Number of People in Units Failing Inspection	Total number of people in Section 8 housing units failing inspection
Number of People in Section 8 Units	Total number of people in Section 8 housing units
Percentage of Units Passing Inspection	Percent of in units failing inspection
Percentage of People in Units Failing Inspection	Percent of people in units failing inspection

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Appendix G: Historic Properties and Redlining Dataset

HOLC A Designation	Grade A "Best" area, as graded by the HOLC
HOLC B Designation	Grade B "Still Desirable" area, as graded by the HOLC
HOLC C Designation	Grade C "Definitely Declining" area, as graded by the HOLC
HOLC D Designation	Grade D "Hazardous" area, as graded by the HOLC (i.e. "redlined" neighborhood)
Name	Name of site
Address	Street address of property
Year Built	Year structure was built/finished
Local Historic Site Designation	Whether the site has been designated as historic by a local authority
Description	Description of the site
Image	Photograph of the site
Citation	Source material

Appendix H: Natural Environment and Climate Dataset

Annual number of days above 90°	Derived from the CDC EPH tracker tool, this layer tracks the annual number of days where temperatures reached ninety degrees. Through the dropdown bar, years between 1979 and 2021 can be selected.
Annual number of extreme heat events	Derived from the CDC EPH tracker tool, extreme heat events are defined as the annual number of events where temperatures over ninety degrees were sustained for a period of at least two days. Through the dropdown bar, years between 1979 and 2021 can be selected.
Deviation (+/-) from the mean surface temperature	An adapted ArcGIS Living Atlas dataset displaying the deviation from the mean surface temperature for census tracts in Miami.
Max surface temperature	A USGS Landsat dataset displaying a composite image of the maximum surface temperature value over the nine-year period of 2011-2018 focused as close to August with the most cloud-free pixels available. This dataset was created by Abraham Parrish, GIS Services Librarian, University of Miami Richter Library.
Tree canopy	Using 2016 data from the Multi-Resolution Land Consortium (MRLC), this layer displays the prevalence of tree canopy coverage in a 30 meter by 30-meter cell as a percentage of cell composition.
Imperviousness	Through 2019 MRLC granular surface data, 30-meter by 30-meter cells are mapped as pixels displaying the percentage of impervious ground per cell as a percentage value from zero to one hundred percent imperviousness.
FEMA flood zones	Geographic areas designated by FEMA to possess varying flood risk. These maps are used by FEMA to determine insurance rates for the Federal Flood Insurance Rate Maps (FIRM). The Special Flood Hazard Areas (SFHA) are defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood. The zones within the SFHA are shown on this map. Flood Zone A = Geographic area that has a 1% annual flood risk; we grouped within this designation AE, A1-A30, AH, AO, AR and A99.

	Flood Zone V = Coastal geographic area that has a 1% of annual flood risk; we grouped within this designation VE and V1-V30. Flood Zone X = Undetermined or low-flood risk geographic area Data Source: MIAMI-DADE COUNTY OPEN DATA HUB
Elevation	Ground elevation as rendered by the United States Geological Survey's (USGS) Digital Elevation Model (DEM). The DEM is a 3D computer graphic presentation of elevation data. DATA SOURCE: MIAMI-DADE COUNTY OPEN DATA HUB
Sea level rise projections	Trending increase of the sea surface level as an outcome of global warming. The yearly projections display the increasing severity of its impact on Miami-Dade County. The tidal surface based on NAVD88 was calculated with the Mean Higher High Water (MHHW) for the months of August-September of 2019 in Virginia Key. We selected Virginia Key because it is the most representative tide station in the region. The compiled values that we used to calculate the MHHW came from NOAA's Tides & Current website. A high-resolution digital elevation model (DEM) layer created by the United States Geological Survey (USGS) identifies areas on land that could be inundated from rising sea levels. The sea level rise projections are based on the Southeast Florida Regional Climate Change Compact's 2019 Unified Sea Level Rise Projection 'High' projections to present a worst-case scenario. Data sources: NOAA, Southeast Florida Regional Climate Change Compact
Storm surge projections	Rising water resulting from hurricane winds and low pressure during extreme storm events. Hurricane Andrew's storm surge values were used as reference to illustrate the resulting coastal flooding that could emerge from a similar storm at different projected time horizons. The 10-year projections display the increasing severity of its impact associated with the projected sea level rise in Miami-Dade County. Original surge values from NOAA, surge heights referenced to NAV88.

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