

HUD'S HOUSING MARKET ANALYSIS: HISTORY AND CURRENT STATE

The federal government's analysis of local housing market conditions, which predates the establishment of the U.S. Department of Housing and Urban Development (HUD), has its roots in the Federal Housing Administration (FHA), which was created by Congress in 1934. FHA market analysts monitored local housing market conditions and derived forecasts of the expected future demand for housing units. When President Lyndon Johnson signed the Housing and Urban Development Act into law in 1965, the FHA market analysts became part of HUD, a new executive department of the federal government. Today, regional and field office economists within HUD's Office of Policy Development and Research (PD&R), Economic and Market Analysis Division (EMAD), have assumed the role of the former FHA market analysts as they continue the work of analyzing local housing market conditions.

EMAD assesses local housing market conditions to meet a statutory requirement. Section 209 of the National Housing Act states the following:

The Secretary shall cause to be made such statistical surveys and legal and economic studies as [he/she] shall deem useful to guide the development of housing and the creation of a sound mortgage market in the United States, and shall publish from time to time the results of such surveys and studies. (National Housing Act, 1934, as amended)

EMAD's housing market analyses serve a variety of purposes. Sound analysis of housing markets is critical to HUD's programs and missions, particularly in the Department's efforts to avoid adverse effects on existing housing supplies, promote affordable housing, and maintain stable housing and mortgage markets. Through its FHA mortgage insurance programs, HUD insures the mortgages of rental developments serving families and elderly households. HUD's field economists analyze market conditions and assess the demand for additional rental housing in specific housing market areas to assist in the consideration of applications for new construction and substantial rehabilitation project mortgage insurance. EMAD provides the Office of Multifamily Housing Programs with a detailed report on the current and forecast housing market conditions within each area.

EMAD is heavily involved in providing housing market information and data to HUD officials who are helping coordinate the rebuilding efforts in communities affected by natural disasters. In recent years, EMAD has analyzed local housing market conditions after Hurricanes Harvey, Irma, and Maria, which affected Texas, the U.S. Virgin Islands and Florida, and Puerto Rico, respectively, in 2017. EMAD has also done significant ongoing analysis of New Orleans after the effects of Hurricane Katrina in 2005. EMAD's analysis helps assist policymakers with rebuilding efforts and monitors the recovery of the housing markets. The pre-disaster conditions of the affected market areas are assessed and then conditions are assessed periodically during the years after the disaster.

EMAD provides market intelligence to other offices within HUD, including the Office of the Secretary, Field Policy and Management, and Community Planning and Development. HUD publishes EMAD's housing studies and reports to provide information to builders, lenders, developers, planners, economic development officials, real estate professionals, government officials, academics, and the general public. These reports include Housing Market Profiles, Regional Narratives, Market at-a-Glance Reports, and Comprehensive Housing Market Analyses (CHMAs), all of which are posted on the HUD User website (www.huduser.gov) on the U.S. Housing Market Conditions webpage. In addition, EMAD delivers presentations on the state of the nation's housing markets as a part of PD&R's Quarterly Briefings.

Background and Overview of a Housing Market Analysis

Since 2002, HUD has published 567 CHMAs. Exhibit 1 lists the 45 comprehensives that were published in 2018, and Exhibit 2 lists some of the ones that EMAD intends to publish in 2019. In this article, the techniques that EMAD economists use in conducting comprehensive studies are discussed. These techniques are like those that the field economists use in all EMAD housing studies.

The theoretical foundation for EMAD's housing market analysis techniques dates back to the days of the FHA market analysts and has been well documented in the *FHA Techniques of Housing Market Analysis* text. The techniques that economists use to conduct their analyses are grounded in a reconciliation-based framework. The FHA techniques text sums it up best with the following passage from the foreword:

The analysis of a housing market is not a precise process utilizing formulas to develop an unqualified and certain answer. It is limited by the accuracy of statistical data and

■ **Exhibit 1. Comprehensive Housing Market Analysis Reports Published in 2018**

Allentown-Bethlehem-Easton, Pennsylvania-New Jersey
Atlanta Metropolitan Area Series Focus On: Fulton and DeKalb Counties, Georgia
Austin-Round Rock, Texas
Baltimore-Columbia-Towson, Maryland
Boise City, Idaho
Canton-Massillon, Ohio
Charlotte-Concord-Gastonia, North Carolina-South Carolina
Chicago Series Focus On: Downtown Chicago
Cleveland-Elyria, Ohio
Columbus, Ohio
Davenport-Moline-Rock Island-Bettendorf, Iowa-Illinois
Denver, Colorado
Des Moines-West Des Moines, Iowa
District of Columbia
Fort Collins, Colorado
Fort Wayne, Indiana
Greenville-Anderson-Mauldin, South Carolina
Harrisburg-Carlisle, Pennsylvania
Hartford-West Hartford-East Hartford, Connecticut
Hickory-Lenoir-Morganton, North Carolina
Houston, Texas
Las Vegas-Henderson-Paradise, Nevada
Los Angeles Metropolitan Division Series Focus On: Central Los Angeles, California
Los Angeles Metropolitan Division Series Focus On: San Gabriel Valley, California
Manchester-Nashua, New Hampshire
Midland-Odessa, Texas
Montgomery-Frederick, Maryland
New Orleans, Louisiana
North Port-Sarasota-Bradenton, Florida
Orange-Rockland-Westchester, New York
Orlando-Kissimmee-Sanford, Florida
Palm Bay-Melbourne-Titusville, Florida
Phoenix-Mesa-Scottsdale, Arizona
Portland-South Portland, Maine
Puerto Rico
Reno, Nevada
Rochester, Minnesota
Sacramento-Roseville-Arden-Arcade, California
Saginaw-Midland-Bay City, Michigan
Salisbury, Maryland-Delaware
Spartanburg, South Carolina
Springfield, Massachusetts
St. Louis, Missouri-Illinois
Tampa-St. Petersburg-Clearwater, Florida
United States Virgin Islands

■ **Exhibit 2. Comprehensive Housing Market Analysis Reports Scheduled for Release in 2019**

Albany-Schenectady-Troy, NY
Atlanta Metropolitan Series Focus On: Northern Suburbs, GA
Bend-Redmond, OR
Boston, MA
Boulder, CO
Calvert-Charles-Prince George's, MD
Charlottesville, VA
Chicago Series: Remainder: IL-WI
Colorado Springs, CO
Detroit-Warren-Dearborn, MI
Kennewick-Richland, WA
Knoxville, TN
Miami-Miami Beach-Kendall, FL
Milwaukee-Waukesha-West Allis, WI
Newark, NJ-PA
Portland-Vancouver-Hillsboro, OR-WA
Racine, WI
Rhode Island
Salem, OR
San Antonio-New Braunfels, TX
San Francisco-Redwood City-South San Francisco, CA
Springfield, IL
St. George, UT
Trenton, NJ
Tucson, AZ

derivations, the reliability of the estimates developed, the competency of the judgments which must be incorporated into the analytical process at every step, and the uncertainties of projections of future economic developments. (*FHA Techniques of Housing Market Analysis*, foreword, revised August 1970)

Although the techniques employed by the field economists have been updated and refined over time in response to an increased understanding of market behavior and new data sources, much of the core methodology has not changed.

The basic assumption of the EMAD methodology is that changes in the economy of an area—or an adjacent area, in the case of a bedroom community—are typically the basis for changes in the housing market conditions in that area. As jobs are created in an area, the population will likely grow and new households will be formed. These new households represent a key component of the demand for new housing units. EMAD's approach is to estimate the demand for new housing units rather than to focus on "how much" housing will be consumed.



Most of the existing literature on housing demand focuses on housing characteristics, such as size, amenities, and neighborhood qualities, and ultimately attempts to determine what level of housing consumption will provide a household with the maximum level of utility or satisfaction. For example, do households want a home with a pool, do they need four bedrooms instead of three, and how many square feet do they want? That is not EMAD's focus. The EMAD methodology focuses on how many new housing units are needed in a housing market area while satisfying demand from existing and new households, replacing units lost from the housing stock, and allowing for an acceptable level of vacant units to ensure balanced housing market conditions. To assess the current state of supply and demand within a housing market area, EMAD gathers data on demographic, economic, and residential building trends. EMAD economists analyze those trends to determine their relationships with each other and to assess their effect on market conditions.

A Comprehensive Housing Market Analysis focuses on four key dates: the two most recent Decennial Census periods (currently 2000 and 2010); the “current” or “as-of date” of the study; and the “forecast date,” which is typically 3 years from the current date. More recently, American Community Survey (ACS) data have been incorporated into the EMAD analyses because this survey provides a more up-to-date benchmark than the Decennial Census.

Getting Started—The Importance of Good Fieldwork

Every housing market area is unique. Factors that can differ from market to market include the economy, commuting patterns, demographics, the history of the market area, seasonal fluctuations, cyclical patterns, state of the housing inventory, topography, and local politics, to name a few. The EMAD techniques can be used to analyze any housing market area, but for someone to become an expert both in the use of those techniques and on a particular housing market area takes much experience.

A typical CHMA takes several months to complete. First, the economist needs to define the housing market area. In general, a housing market area is a geography within which housing units are competitive with one another. Often, the market area is defined as a metropolitan area. Within a metropolitan area, however, unique submarkets may exist and may have to be analyzed separately. For example, a suburban county, a city, or a neighborhood in a city, such as Center City Philadelphia, may represent a distinct housing submarket within the metropolitan area.

An analysis begins with the collection of a variety of data on the housing market area, including population, households, housing inventory, labor force, resident employment, unemployment, sector-level nonfarm payrolls, building permits, residential construction, population estimates, home sales, home prices, vacancy rates, and rents. After collecting the initial data, the economist analyzes trends and begins to formulate the “story” of that unique housing market. During this process, the economist identifies points in the analysis where additional information is needed to complete the story—for example, odd trends in the data that need to be explained, errors in the data, or outliers. To address those issues, the economist conducts fieldwork in the housing market area.

Fieldwork, which is a critical part of any housing market analysis, serves numerous purposes, including to (1) obtain data not available from other sources, (2) verify the data already obtained, (3) collect observations on characteristics and operations of the housing market, and (4) attempt to address the issues raised in the initial analysis of the data. For fieldwork, an economist usually spends approximately 1 week in the market area. In cases in which time is limited or the analyst has experience with the market area, fieldwork may be done via phone calls and the Internet. When conducting fieldwork, an economist talks with a variety of people, including local building permit officials, community planners, economic development officials, home builders' associations, apartment associations, local housing authorities, realtors, property managers, developers, college and university officials, the chamber of commerce, local labor market analysts, and military housing officers (in markets with a significant military installation). The expectations are that, through the fieldwork process, the answers to the questions raised during the initial analysis will become apparent, or the economist will obtain data that enable him or her to make a reasoned judgment based on sound statistical analysis.

The Reconciliation Process

As previously mentioned, the methodology EMAD uses is a reconciliation-based approach that provides a series of checks and balances during the analytical process. The economist generates a current estimate of population using two independent methods. One method of estimating population is through a demographic approach that analyzes net natural change (NNC) and migration:

$$\Delta Population = NNC + NetMigration$$

where $\Delta Population$ equals the change in population.

Vital statistics on resident births and deaths, which the economist collects from 2000 through the most recent

month, provide the inputs for NNC. The trends in NNC are generally stable over time. The other component of population change, net migration, tends to be more reactive to economic conditions. Net migration is composed of people moving into and out of the housing market area. Annual population estimates from the Census Bureau, the state, the field economist, or other sources contribute to an analysis of the trends in net migration. The economist develops a current population estimate using these trends in NNC and migration from the most recent Decennial Census date.

A second method of estimating population is the economic method. This method involves analyzing labor force, resident employment, and nonfarm payroll data and their respective participation rates. EMAD's definition of a participation rate differs from that used by the Bureau of Labor Statistics (BLS). BLS uses the 16-and-over, civilian, noninstitutionalized population to derive a participation rate. To simplify the analysis, EMAD uses the total population when calculating participation rates. This means that EMAD's participation rates will be lower when compared with BLS rates. The following equation shows the relationship between population, resident employment, and the resident employment participation rate (the equations for labor force and nonfarm payrolls have an identical relationship):

$$\text{Population} = \frac{\text{Resident Employment}}{\text{Resident Employment Participation Rate}}$$

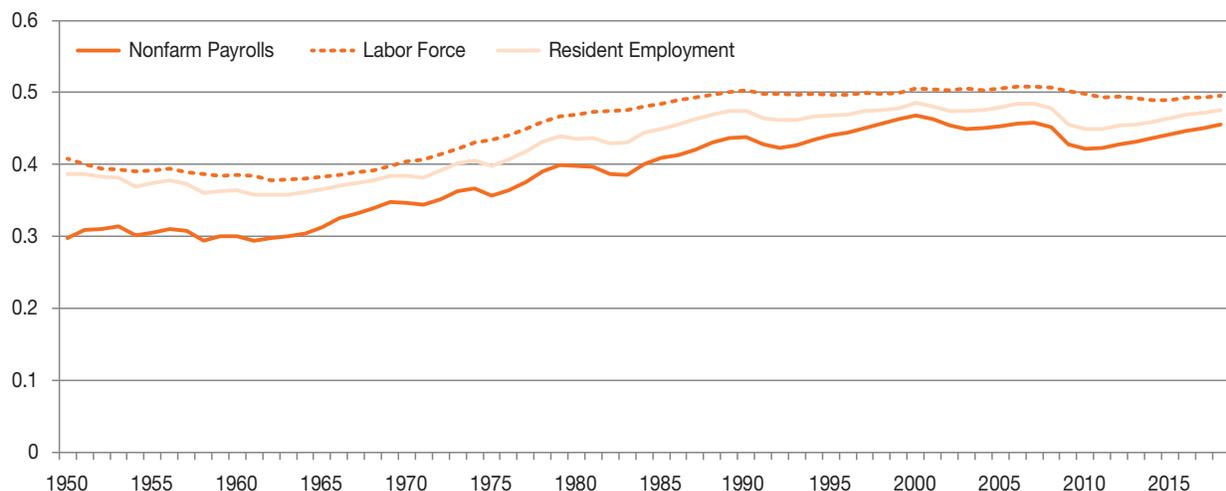
Using annualized data from BLS on nonfarm payrolls, labor force, and resident employment, as well as 2000 and 2010 population counts from the Census Bureau and annual population estimates, the relevant participation

rates can be calculated and annual trends analyzed. Exhibit 3 shows the participation rate trends for the three variables for the United States from 1950 through 2018. Over time, the labor force participation rate appears to have the greatest stability. Although the trends in values and participation rates for all three variables are examined, resident employment and labor force are analyzed more closely because they are based on where people live and need housing. The economist estimates a current participation rate based on past trends, which is used in the calculation to arrive at a current population estimate.

At this point in the analysis, the economist has two population estimates: demographic and economic, which must be reconciled. The economist returns to each methodology and reevaluates assumptions until the two estimates are similar and logically consistent. The final estimate derived is the current population estimate in the study.

After determining a current population estimate, the economist is ready to develop a current household estimate. Again, this determination involves two different methods and a reconciliation of the independent estimates. The first method uses the population estimate derived previously as the starting point. Because the economist is interested in the number of households, it is necessary to remove all people not living in a household (that is, nonhousehold population or group quarters). Exhibit 4 shows the components of group quarters for the United States in 2017. A current estimate of the group quarters population is made using data from the Census Bureau and information collected during fieldwork. By subtracting the nonhousehold population from the population estimate, the economist obtains an estimate

■ Exhibit 3. Participation Rate Trends: 1950 Through 2018

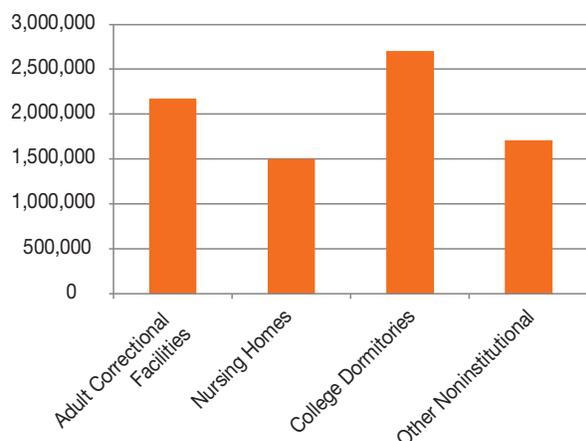


Sources: U.S. Census Bureau and Bureau of Labor Statistics



for household population. By applying an estimate of the current household size to that value, the economist generates an estimate of current households. Exhibit 5 shows trends in household size for the United States from 1947 through 2018. Household size has remained relatively stable in recent years on a national level but can vary significantly on a local level.

■ **Exhibit 4. Group Quarters for the United States, 2017**



Source: 2017 American Community Survey 1-Year Estimates

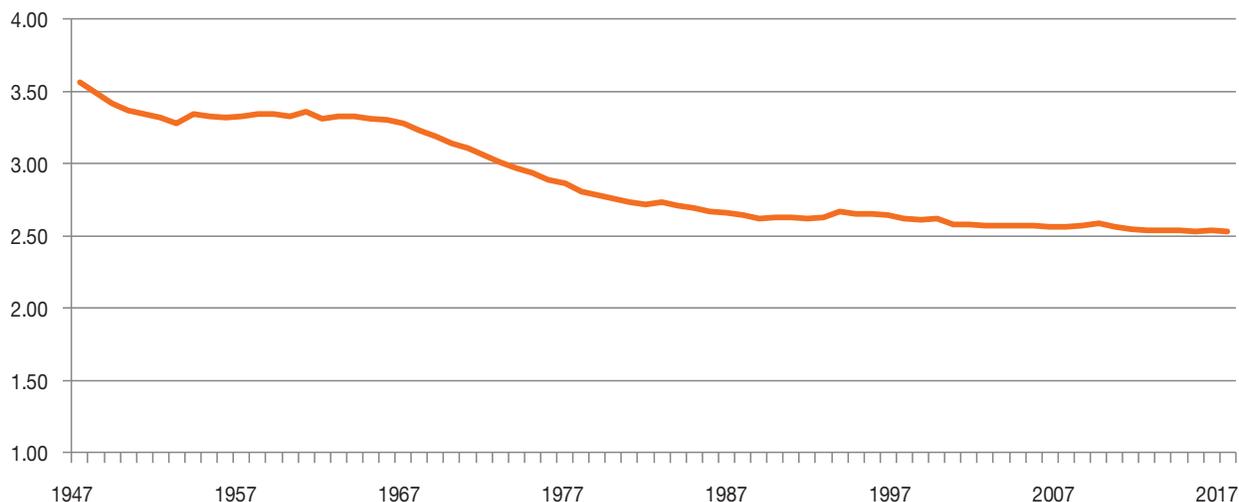
The second method for estimating the current number of households is by using the housing inventory method. One occupied housing unit is equal to one household. Using data obtained through fieldwork, building permits, the ACS, and third parties, the economist makes an estimate of the current housing stock by tenure. In this estimate, the economist must consider the number of

units added to the housing inventory without a building permit, units lost from the inventory, and the net change in the number of mobile homes. One of the more difficult components to analyze is the number of “other vacant” housing units. Exhibit 6 illustrates the four primary categories of other vacant housing and their levels in the United States, as reported in the 2017 ACS data. Because occupied units are the basis for deriving an estimate of the number of households, the other vacant units are subtracted from the overall housing inventory. The remainder is the number of housing units that either are occupied or could be occupied (available vacant). By analyzing past trends, third-party data, and fieldwork, the economist derives current estimates for sales and rental vacancy rates. Applying those rates, the economist can factor out the vacant housing and determine the level of occupied owner and rental housing, which totals the number of households.

The next step is for the two household estimates to be reconciled. The analyst revisits the assumptions made in the two calculations and makes changes based on trends and fieldwork to get the two estimates similar. This will be the current household estimate in the analysis.

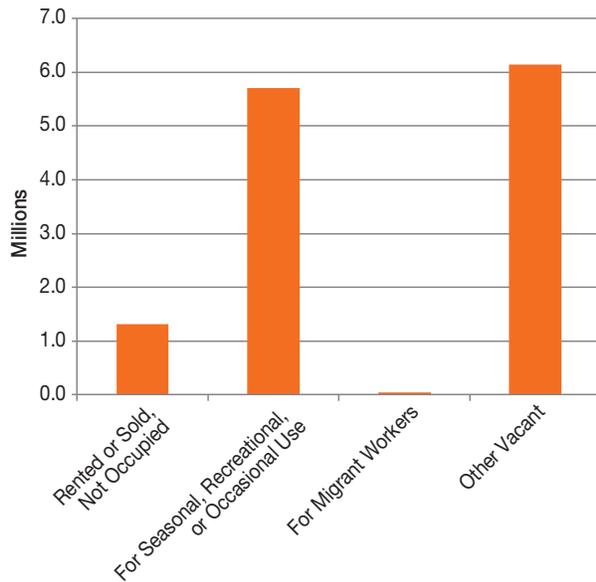
EMAD uses similar methods to generate the forecast population estimate. This time, however, the economist must also estimate future values for labor force, resident employment, and nonfarm payrolls. To assist in this process, annual data on nonfarm payroll sectors are analyzed to provide an overall understanding of the economy of the market area and help the economist estimate future economic growth. Exhibit 7 shows the typical BLS sectors that are analyzed in a study as a percentage of total

■ **Exhibit 5. United States Household Size, 1947 Through 2018**



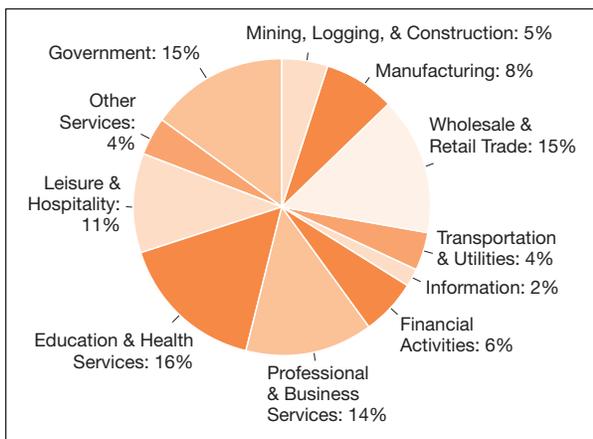
Source: U.S. Census Bureau

■ **Exhibit 6. Other Vacant Housing Units in the United States, 2017**



Source: 2017 American Community Survey 1-year estimates

■ **Exhibit 7. U.S. Nonfarm Payrolls, by Sector for 2018**



Note: Numbers may not add to 100 percent due to rounding.
Source: Bureau of Labor Statistics

nonfarm employment in the United States during 2018. The economist also uses the information obtained during fieldwork to generate these estimates.

Deriving a forecast household estimate is a bit less complicated. The economist applies an estimated household size during the forecast period to the estimated forecast population to obtain the number of new households during the forecast period.

Housing Demand

The change in households during the forecast period is the basis for EMAD's estimate of new housing demand. Gross housing demand is equal to the change in the number of households plus replacement of units expected to be lost from the housing stock. The economist estimates a rate of housing loss, based on past trends in that market area, and applies this rate to the current estimate of housing inventory to estimate expected losses. In addition, the economist adjusts the household estimate to account for household tenure shifts and inventory tenure shifts. Households can switch from owner to renter status or renter to owner status, depending on the condition of the economy and housing market. Housing units also can change tenure status from owner to rental or rental to owner. Examining past trends in household and inventory tenure shifts helps economists make estimates of these changes. Finally, economists must take current market conditions into account by examining the status of "excess" available vacant units. A minimum vacancy level is needed in healthy markets for optimum movement between units, but when the number of vacancies rises too high, the market becomes soft. In such markets, the excess units should be absorbed before the construction of new units is recommended. After this adjustment is made, the economist has the final estimate of demand for additional sales and rental housing. Those estimates indicate the number of units that should be built during the forecast period to maintain or achieve balanced market conditions.



■ Exhibit 8. Standard Tables and Figures in a Comprehensive Housing Market Analysis

Table: Housing Demand in the HMA During the Forecast Period
Table: Major Employers in the HMA
Table: 12-Month Average Nonfarm Payroll Jobs in the HMA, by Sector [for two most recent 12-month periods]
Table: HMA Population Quick Facts
Table: Home Sales Quick Facts in the HMA
Table: Demand for New Sales Construction Units in the HMA
Table: Rental and Apartment Market Quick Facts in the HMA
Table: Demand for New Rental Construction Units in the HMA
Figure: 12-Month Average Unemployment Rate in the HMA
Figure: 12-Month Average Nonfarm Payrolls in the HMA
Figure: Current Nonfarm Payroll Jobs in the HMA, by Sector
Figure: Sector Growth in the HMA, 2010 to Current
Figure: Components of Population Change in the HMA, 2000 Through the Forecast
Figure: Households by Tenure and Homeownership Rate in the HMA
Figure: 12-Month Average Sales Totals by Type in the HMA
Figure: Sales by Price Range During [the Current 12 Months] in the HMA
Figure: 12-Month Average Sales Price by Type of Sale in the HMA
Figure: Annual Sales Permitting Activity in the HMA
Figure: Annual Rental Permitting Activity in the HMA

After the economist completes the estimates and the subsequent comprehensive report, they undergo thorough review before HUD publishes the final report. All comprehensive reports are relatively standard in terms of the structure of the report and in the types of information presented, but each report is unique to its market area in content. In 2019, EMAD updated its Comprehensive Market Analysis Report format to include additional maps, figures, tables, and content. Exhibit 8 lists the standard tables and figures included in each CHMA, although each report may contain additional figures, tables, or maps. In reports that contain submarkets, some of the tables and figures are repeated for each submarket.

As many people and institutions in the United States have learned all too well during the past 20 years, housing market conditions constantly change. As a result of these ever-changing conditions and the uniqueness of each market area, and to promote stable market conditions and support HUD's missions, having sound local housing market analyses based on common, time-tested analytic principles is essential.

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