

## Formulas used to calculate the Housing Affordability Index (HAI)

*Median Price Existing Single-Family Home* – Comes from the existing home sales monthly survey conducted by the National Association of Realtors®

*Monthly Mortgage Rate* – NAR uses the “effective mortgage rate” for preoccupied homes in the HAI calculations. The effective mortgage rate is reported by the Federal Housing Finance Board on a monthly basis. The effective mortgage rate reflects the amortization of initial fees and charges.

*Principle & Interest Payment* – Monthly Payment

Formula:  $MEDPRICE * .8 * (IR/12) / (1 - (1 / (1 + IR/12)^{360}))$

*Median as % of Income* = Necessary monthly income

Formula:  $((PMT * 12) / MEDINC) * 100$

*Median Family Income* – NAR uses Income data from the Census Bureau Decennial Survey. Census income data is not available for the upcoming year. Thus, NAR analysts project income levels for the upcoming year that are used in HAI calculations. Annual revisions are made to the HAI series when “actual” income data is released.

*Qualifying Income* – Income necessary to qualify for a loan for the median priced home

Formula:  $PMT * 4 * 12$

*Housing Affordability Index(Composite)*- Measures the degree to which a typical family can afford the monthly mortgage payments on a typical home.

Formula:  $(MEDINC / QINC) * 100$

Key:

IR = Interest Rate

MEDPRICE = Median price of existing single-family home sale

PMT= Monthly payment

MEDINC = Median Family Income

MINC = Necessary Monthly Income

QINC = Qualifying Income