

# The ECFRPC Housing Methodology

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A methodology for assessing the affordable housing impact  
of Developments of Regional Impact

This is the former methodology used by the ECFRPC. We no longer support or use this methodology for housing.

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East Central Florida Regional Planning Council  
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## In This Publication

This publication contains the East Central Florida Regional Planning Council's housing demand, supply and need methodology for Developments of Regional Impact (DRIs). Following is background information on development of the methodology; an explanation of the methodology itself; tables containing the statistics needed to complete the methodology for any county in Florida; copies of two spreadsheets, one that estimates demand and a second that estimates affordability; and a listing of data sources. If after reading this publication you have questions about the methodology, please contact the RPC at the address on the back cover.

## Background

In 1992, the RPC developed a methodology for assessing the impact of DRIs on the ability of persons to find affordable housing accessible to their places of employment. In 1994, the Florida Department of Community Affairs adopted an Adequate Housing Rule for conducting affordable housing impact assessments on DRIs. The RPC methodology has been accepted for use in lieu of the adequate housing rule, both within the east central region and throughout the state.

The RPC methodology involves:

1. projecting the number, types, and wages of employees for a particular project;
2. estimating the number of these employees who will have a need for affordable housing; and
3. estimating whether an adequate supply of affordable housing exists proximate to the project site to meet this need.

The formulas used in the methodology are based on actual trends in the county in which a particular project is located; statistics illustrating these trends are taken from the U.S. Census. Census figures should be updated in this methodology as they become available.

## The Methodology

Following is the RPC methodology for calculating the demand, supply and need for affordable housing. In lieu of this methodology, a survey-based methodology may be used for determining housing demand and supply, provided the methodology used and the basis for departing from this methodology are accepted by Department of Community Affairs and the appropriate regional planning council. Results of all analyses should be in a form that clearly establishes the steps through which calculations were made and lists any pertinent data or information used in the calculation of housing demand and supply.

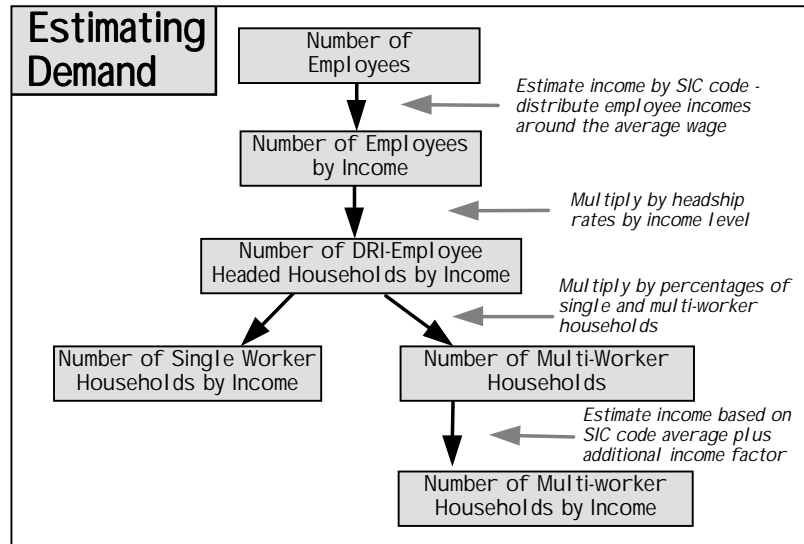
## Estimating Demand

Demand for affordable housing is estimated by determining the number of very low, low and moderate income households in which a DRI employee is the head of the household, and then projecting income for these households. The diagram below illustrates the demand calculation.

Following are the steps for estimating demand for affordable housing for a DRI. A spreadsheet for estimating demand is contained in Appendix D.

1. Determine the median income and income thresholds for very low, low and moderate income households for the appropriate county or Metropolitan Statistical Area (MSA). The source for this information is the US Department of Housing and Urban Development (HUD). (Appendix E includes a complete listing of data sources.)

2. Determine how many permanent, non-construction jobs will be created as a result of the development (including part-time).
3. Determine how many of these jobs will have salaries within the very low, low or moderate income ranges. Use the average salaries from the Florida Department of Labor and Employment Security given by SIC code, or other reliable source. (SIC code average wages can be distributed using a normal, or bell curve, distribution.)



4. Determine the percentage of wage earners in each income category who are the head of a household for the appropriate county (see Table 1, *Headship Rates by Income Level*). Use this percentage to estimate the number of employee households by income.
5. Using the percentages of *Single-worker and Multi-worker Households* from Table 2, separate the households (estimated in step 4) into single and multi-worker households.
6. The income of the single-worker households is the same as the income per SIC code (or the income estimated by distributing the employees around the average wage) determined in step 3. Using the percentages of *Additional Income for Multi-worker Households* in Table 1, factor in the additional income to the SIC code income to estimate the income of multi-worker households.
7. Estimate housing affordability for each of the households in step 6. Affordability is defined in Appendix A, and a spreadsheet for determining affordability is contained in Appendix D. **Please note: affordability is estimated using the actual income estimates, not the income thresholds for very low, low and moderate income.**

## Estimating Supply

### When to estimate housing supply

- If the DRI consists of phases, the supply calculations for the first phase must be completed at the time the DRI is brought before the Regional Planning Council. Supply calculations for each subsequent phase must be completed prior to the beginning of that phase, and commitments for mitigating housing impacts for each phase must be made prior to the start of that phase.
- For one-phase DRIs, the supply calculations must be completed at the time the DRI is brought before the Regional Planning Council. Housing impacts must be mitigated prior to issuance of permits.
- One-phase projects can be reviewed at interim points in the project to determine whether adequate housing will be available to meet the project's demand.

## How to estimate housing supply

1. Determine the extent of the housing supply area using the ten-mile/twenty minute (whichever is less) boundary. The travel times should be taken at peak hour. See Appendix B for more information.
2. Determine the existing housing supply within the supply area. At a minimum, the supply calculation should include a breakdown of affordability of units by cost for rental or owner-occupied. The following parameters shall be used when determining housing supply:
  - a. **In general:** Use of public sector published materials on availability and cost of reasonably accessible housing units is acceptable, so long as the data are no more than two years old. This may include local government surveys or reports or other government-sponsored housing survey data. The use of census materials should be restricted to a 2-year period following release of the census data.
  - b. The use of private sector data on the availability and cost of reasonably accessible housing units is acceptable when appropriate and verifiable as to accuracy.
  - c. **Units permitted or under construction** cannot be counted toward the existing housing supply (with the exception of units contained within the DRI in question or units toward which the applicant has donated funds for construction).
  - d. **Vacancies** can be counted for single family units; for multi-family units, the first five percent of vacancies (as a percent of total units) are to be considered transitional vacancies and should not be counted toward the existing supply.
  - e. **Substandard units** also should be excluded from the count of existing housing. If vacant substandard units are present in the housing supply area, rehabilitation of these units could count toward mitigation of the housing need generated by the DRI.
  - f. **Maximum caps by unit size:** For more information please see Appendix C.

## Sources for Data

### Owner-occupied or for sale housing:

1. One method employed by applicants to determine the availability of owner-occupied housing involves searching the Multiple Listing Service (MLS) listings for all housing for sale within the supply area that meets the affordability criteria for project employees.
2. A second method relies on property appraiser data associated with recent housing transactions to gauge availability of affordable owner-occupied or for sale housing units for a recent time period. Only qualified, arm's-length residential transactions located within the housing supply area (the lesser of 10 miles or 20-minutes) of the project under review are included. To avoid any possible distortions of the housing market, this analysis should consider only the most recent sale of any given residence, excluding any multiple prior sales of the same residence.

In recognition of demand timing considerations, this approach uses sales over a recent 12-month time period. While it might be reasonable to use a longer time period, the possibility of multiple sales of a single residence becomes greater over a longer term. By comparison, using a shorter time period makes the analysis more vulnerable to distortions caused by seasonal factors. A shorter time period also offers a less reliable basis for trend analysis. For these reasons, a 12-month time period is considered to offer a reasonable basis for evaluating the residential market in a given area.

## Renter-occupied housing:

1. To identify the existing supply of renter-occupied housing, one method used involves compiling a list of apartment units in the supply area. This list generally comprises large apartment complexes, because the firms that supply the data collect it for complexes of over fifty units. Once the list is generated, information regarding price ranges and vacancies is obtained from the management offices of these apartment complexes.
2. A second approach uses rental housing data published in the 1990 Census and updates these data for recent occupancy statistics. The 1990 Census is used to establish the total number of rental units in the study area by rent range, and occupancy statistics (from locally accepted private sources) are used to establish the current vacancy rates for rental units in the study area. The Census represents the most reliable and comprehensive data source for drawing conclusions regarding an area's total rental housing supply. The summary tape files of the Census furnish data concerning the actual distribution of renter occupied housing units among monthly rent ranges which are measured in \$50 or \$100 per month increments, starting at \$150 per month. This more detailed rental information is used in this analysis of rental supply.

Under this approach, the estimated inventory of vacant units is calculated by subtracting the total number of occupied rental units - based on a current occupancy rate estimate - from the total number of rental housing units reported in the 1990 Census. Once again, this approach relies on recent occupancy statistics available from locally accepted private sources to estimate the current vacant supply of rental units.

## Estimating Need

Compare final housing supply inventory figures with the estimation of housing demand. If there is not an adequate supply of affordable housing to meet the projected demand, the DRI must mitigate this impact.

Significance threshold: The project will be deemed to have a significant impact on the ability of the project's employees to find adequate housing reasonably accessible to their places of employment when, for any phase or stage of development, the development's cumulative housing need is projected to exceed 5 percent of the applicable DRI residential threshold for the affected local government, or 50 units, whichever is larger.

## Mitigation

The affordable housing demand and supply calculations quantify the need for affordable housing for employees of a DRI. The DRI developer is required as a condition of development approval to mitigate that housing need. Following are options for mitigating the impact of a DRI on the availability of affordable housing.

1. Criteria for all DRIs
  - a. **Mitigation Options:** The applicant must do one or more of the following in order to mitigate the DRI's housing impact:
    - build affordable housing units
    - "buy down" unaffordable units to make them affordable
    - rehabilitate vacant substandard affordable housing units
  - b. **Timing of housing construction, buydown or rehabilitation:** The applicant must complete a housing supply inventory prior to the beginning of each phase, and must make any necessary mitigation commitments at that time. In order to tie housing construction as closely as possible to housing need, the applicant must, at the time a certificate of

occupancy application is made for a particular building, show that the housing has been made available for the number of employees (as determined by the formula) expected to be employed in that building.

- c. **Resale and rent controls** - guarantee of continued affordability: The housing provided by an applicant to mitigate the affordable housing impacts of a DRI must remain affordable to those income groups for which it was constructed. To accomplish this, deed restrictions can be used for owner-occupied property and management contracts used for rental property.
2. Options for DRI developers to meet these criteria:
    - a. Build housing on-site
    - b. Build housing off-site (within ten miles/twenty minutes)
    - c. Contract with housing developers to have housing built on the DRI site
    - d. Contract with housing developers to have housing built proximate to the DRI site
    - e. Rehabilitate vacant substandard housing within the housing supply area
    - f. Any combination of the above mitigation options

## Tables and Appendices

**Table 1: DRI Formula Statistics - Alachua to Liberty County**

County	Maximum Caps by Housing Unit Size (percentages)			Headship Rates by Income Level (percentages)			Additional Income for Multi Worker Households (%)
	Efficiency	1 Bedroom	Combined Total*	Very Low	Low	Moderate	
Alachua	27.9	34.8	62.7	38.3	55.8	62.6	100.7
Baker	15.6	28.2	43.8	32.0	61.5	78.6	74.9
Bay	23.0	35.4	58.4	37.7	57.8	70.7	63.4
Bradford	19.9	34.2	54.1	38.4	54.0	66.4	62.8
Brevard	23.5	39.8	63.3	34.8	59.4	71.9	53.2
Broward	29.3	37.2	66.4	36.8	56.5	65.3	73.2
Calhoun	24.1	31.0	55.2	39.6	51.6	63.0	58.8
Charlotte	22.9	51.4	74.3	34.4	62.5	75.4	47.5
Citrus	23.1	49.0	72.1	38.8	62.3	71.8	61.0
Clay	14.9	31.6	46.4	32.0	61.5	78.6	57.0
Collier	22.4	45.5	67.9	36.1	71.1	81.8	43.6
Columbia	22.5	32.2	54.7	38.4	54.0	66.4	80.0
Dade	24.7	29.0	53.6	33.8	49.5	58.6	97.9
DeSoto	21.5	38.4	59.9	36.5	62.8	71.7	57.3
Dixie	22.4	38.5	60.9	38.4	54.0	66.4	65.0
Duval	25.4	31.7	57.1	36.8	54.6	67.4	73.9
Escambia	23.4	34.3	57.7	35.9	60.1	72.9	69.0
Flagler	18.8	49.3	68.1	38.3	60.0	70.4	38.8
Franklin	25.5	36.9	62.4	39.6	51.6	63.0	91.3
Gadsden	21.5	29.5	51.0	39.6	51.6	63.0	141.4
Gilchrist	18.9	36.8	55.7	38.4	54.0	66.4	92.9
Glades	22.5	42.3	64.8	36.5	62.8	71.7	54.0
Gulf	22.4	34.4	56.8	39.6	51.6	63.0	79.8
Hamilton	22.4	28.2	50.6	38.4	54.0	66.4	99.8
Hardee	18.3	32.5	50.8	36.5	62.8	71.7	72.1
Hendry	17.5	30.0	47.5	36.5	62.8	71.7	80.3
Hernando	19.6	50.1	69.7	34.9	64.4	71.7	53.6
Highlands	24.3	49.3	73.6	36.5	62.8	71.7	49.9
Hillsborough	25.2	34.7	59.9	36.4	54.7	66.0	77.8
Holmes	23.5	33.7	57.2	37.7	57.8	70.7	89.0
Indian River	23.8	46.1	69.9	38.0	58.7	70.6	47.4
Jackson	25.3	33.1	58.4	39.6	51.6	63.0	97.1
Jefferson	22.7	31.0	53.6	36.9	56.5	67.7	80.7
Lafayette	19.4	33.4	52.9	38.4	54.0	66.4	65.7
Lake	23.5	45.9	69.3	37.6	61.1	70.5	53.4
Lee	22.9	45.9	68.9	35.2	59.8	71.3	56.4
Leon	26.7	34.6	61.4	36.9	56.5	67.7	96.1
Levy	22.4	38.8	61.2	38.8	62.3	71.8	94.9
Liberty	20.8	30.6	51.4	39.6	51.6	63.0	117.3

\* Note: In the combined total, the percentage of efficiencies cannot be exceeded.

**Table 1 (cont.): DRI Formula Statistics – Madison to Washington County**

County	Maximum Caps by Housing Unit Size (percentages)			Headship Rates by Income Level (percentages)			Additional Income for Multi Worker Households (%)
	Efficiency	1 Bedroom	Combined Total*	Very Low	Low	Moderate	
Madison	22.7	31.1	53.8	38.4	54.0	66.4	109.6
Manatee	26.8	44.0	70.8	36.8	61.3	70.6	61.0
Marion	22.6	41.7	64.4	37.8	61.1	66.9	67.7
Martin	24.8	46.6	71.4	37.8	59.7	72.8	48.6
Monroe	27.6	43.1	70.7	36.1	71.1	81.8	45.4
Nassau	20.9	32.4	53.4	32.0	61.5	78.6	66.3
Okaloosa	20.7	34.9	55.6	33.2	63.7	75.0	55.6
Okeechobee	19.2	36.8	56.0	38.0	58.7	70.6	82.1
Orange	23.5	34.7	58.3	32.7	52.0	66.6	69.9
Osceola	19.2	36.2	55.4	33.5	55.9	65.7	70.9
Palm Beach	27.2	41.5	68.7	37.8	57.1	66.5	53.2
Pasco	25.4	46.4	71.8	36.9	61.8	72.4	60.7
Pinellas	31.7	40.2	71.9	38.6	59.4	67.5	59.7
Polk	22.1	38.6	60.8	36.0	56.3	69.8	68.4
Putnam	23.2	37.8	61.0	38.3	60.0	70.4	86.8
St. Johns	23.7	39.0	62.7	38.3	60.0	70.4	57.7
St. Lucie	20.1	42.4	62.5	35.7	56.0	69.3	58.7
Santa Rosa	18.5	34.7	53.2	35.9	60.1	72.9	60.1
Sarasota	27.5	46.9	74.4	36.3	61.7	71.2	38.0
Seminole	21.1	33.6	54.7	31.7	59.6	69.9	54.8
Sumter	23.3	41.8	65.1	38.8	62.3	71.8	73.9
Suwannee	22.7	34.7	57.4	38.4	54.0	66.4	79.1
Taylor	21.2	33.5	54.7	38.4	54.0	66.4	90.8
Union	18.3	27.4	45.7	38.4	54.0	66.4	71.2
Volusia	26.2	41.2	67.4	37.3	62.5	69.1	60.2
Wakulla	19.4	34.7	54.1	36.9	56.5	67.7	75.7
Walton	24.4	39.9	64.3	33.2	63.7	75.0	59.8
Washington	23.2	35.8	59.1	37.7	52.8	70.7	84.9

\* Note: In the combined total, the percentage of efficiencies cannot be exceeded.

**Table 2: Percent of Single and Multi-Worker Households by Income Level – Alachua to Manatee County**

County	Very Low (percent)		Low (percent)		Moderate (percent)	
	single	multi	Single	multi	single	multi
Alachua	71.6	28.4	59.2	40.8	50.0	50.0
Baker	77.8	22.2	60.0	40.0	38.3	61.7
Bay	80.3	19.7	60.2	39.8	44.5	55.5
Bradford	82.0	18.0	67.8	32.2	46.4	53.6
Brevard	77.9	22.1	58.1	41.9	44.6	55.4
Broward	81.3	18.7	66.2	33.8	49.5	50.5
Calhoun	88.9	11.1	76.2	23.8	56.4	43.6
Charlotte	80.5	19.5	69.1	30.9	48.0	52.0
Citrus	81.4	18.6	68.2	31.8	58.6	41.4
Clay	74.2	25.8	52.0	48.0	31.0	69.0
Collier	72.7	27.3	56.0	44.0	35.7	64.3
Columbia	83.0	17.0	64.6	35.4	48.3	51.7
Dade	79.3	20.7	60.4	39.6	44.7	55.3
Desoto	75.2	24.8	69.0	31.0	48.3	51.7
Dixie	89.4	10.6	76.3	23.7	57.0	43.0
Duval	81.0	19.0	62.4	37.6	45.0	55.0
Escambia	80.5	19.5	63.0	37.0	45.4	54.6
Flagler	77.5	22.5	55.8	44.2	45.8	54.2
Franklin	78.2	21.8	69.3	30.7	59.6	40.4
Gadsden	86.2	13.8	75.8	24.2	49.9	50.1
Gilchrist	72.1	27.9	76.9	23.1	46.2	53.8
Glades	95.0	5.0	76.4	23.6	57.7	42.3
Gulf	84.6	15.4	66.7	33.3	56.2	43.8
Hamilton	80.1	19.9	73.7	26.3	56.6	43.4
Hardee	78.1	21.9	47.9	52.1	41.6	58.4
Hendry	66.3	33.8	59.0	41.0	37.7	62.3
Hernando	76.5	23.5	67.1	32.9	56.8	43.2
Highlands	82.0	18.0	68.7	31.3	54.7	45.3
Hillsborough	78.3	21.7	62.1	37.9	43.4	56.6
Holmes	82.3	17.7	66.4	33.6	51.0	49.0
Indian River	76.4	23.6	62.5	37.5	44.7	55.3
Jackson	79.5	20.5	68.9	31.1	50.6	49.4
Jefferson	80.7	19.3	67.2	32.8	39.1	60.9
Lafayette	82.9	17.1	56.4	43.6	42.2	57.8
Lake	82.4	17.6	66.8	33.2	49.2	50.8
Lee	79.1	20.9	64.3	35.7	40.9	59.1
Leon	67.0	33.0	60.7	39.3	42.1	57.9
Levy	84.5	15.5	71.4	28.6	60.9	39.1
Liberty	78.8	21.2	80.2	19.8	49.4	50.6
Madison	77.7	22.3	69.5	30.5	43.7	56.3
Manatee	82.3	17.7	67.0	33.0	47.4	52.6

**Table 2: Percent of Single and Multi-Worker Households by Income Level – Marion to Washington County**

County	Very Low (percent)		Low (percent)		Moderate (percent)	
	single	multi	single	multi	single	multi
Marion	82.8	17.2	72.6	27.4	53.5	46.5
Martin	79.8	20.2	65.6	34.4	42.1	57.9
Monroe	80.0	20.0	58.4	41.6	41.0	59.0
Nassau	77.5	22.5	60.2	39.8	42.1	57.9
Okaloosa	74.9	25.1	54.2	45.8	39.0	61.0
Okeechobee	84.0	16.0	73.4	26.6	48.7	51.3
Orange	76.8	23.2	58.4	41.6	38.6	61.4
Osceola	76.4	23.6	59.8	40.2	36.2	63.8
Palm Beach	79.7	20.3	63.6	36.4	44.6	55.4
Pasco	79.3	20.7	70.4	29.6	57.8	42.2
Pinellas	83.7	16.3	68.1	31.9	49.5	50.5
Polk	79.1	20.9	66.2	33.8	44.7	55.3
Putnam	84.9	15.1	72.0	28.0	57.9	42.1
St. Johns	76.8	23.2	62.4	37.6	43.5	56.5
St. Lucie	75.9	24.1	62.6	37.4	42.4	57.6
Santa Rosa	73.5	26.5	53.5	46.5	42.8	57.2
Sarasota	80.9	19.1	62.9	37.1	42.9	57.1
Seminole	76.1	23.9	55.5	44.5	34.3	65.7
Sumter	88.3	11.7	71.0	29.0	52.5	47.5
Suwannee	80.6	19.4	72.8	27.2	54.2	45.8
Taylor	84.9	15.1	76.7	23.3	55.7	44.3
Union	72.1	27.9	71.8	28.2	38.0	62.0
Volusia	79.3	20.7	65.1	34.9	48.1	51.9
Wakulla	77.6	22.4	47.3	52.7	49.7	50.3
Walton	81.7	18.3	64.1	35.9	52.1	47.9
Washington	87.4	12.6	68.5	31.5	54.8	45.2

**Table 3: Principal and Interest Payments on a Thirty-Year Mortgage**

Mortgage Amount	Interest Rate											
	6.0%	6.5%	7.0%	7.5%	8.0%	8.5%	9.0%	9.5%	10.0%	10.5%	11.0%	11.5%
\$20,000	\$120	\$127	\$133	\$140	\$147	\$154	\$161	\$168	\$176	\$183	\$191	\$198
\$25,000	\$150	\$158	\$167	\$175	\$184	\$192	\$201	\$210	\$220	\$229	\$238	\$248
\$30,000	\$180	\$190	\$200	\$210	\$220	\$231	\$242	\$252	\$263	\$275	\$286	\$297
\$35,000	\$210	\$222	\$233	\$245	\$257	\$269	\$282	\$294	\$307	\$320	\$334	\$347
\$40,000	\$240	\$253	\$266	\$280	\$294	\$308	\$322	\$336	\$351	\$366	\$381	\$396
\$45,000	\$270	\$285	\$300	\$315	\$330	\$346	\$362	\$378	\$395	\$412	\$429	\$446
\$50,000	\$300	\$317	\$333	\$350	\$367	\$385	\$403	\$421	\$439	\$458	\$477	\$496
\$55,000	\$330	\$348	\$366	\$385	\$404	\$423	\$443	\$463	\$483	\$503	\$524	\$545
\$60,000	\$360	\$380	\$400	\$420	\$440	\$461	\$483	\$505	\$527	\$549	\$572	\$595
\$65,000	\$390	\$411	\$433	\$455	\$477	\$500	\$523	\$547	\$571	\$595	\$619	\$644
\$70,000	\$420	\$443	\$466	\$490	\$514	\$538	\$564	\$589	\$615	\$641	\$667	\$694
\$75,000	\$450	\$475	\$500	\$525	\$551	\$577	\$604	\$631	\$659	\$686	\$715	\$743
\$80,000	\$480	\$506	\$533	\$560	\$587	\$615	\$644	\$673	\$702	\$732	\$762	\$793
\$85,000	\$510	\$538	\$566	\$595	\$624	\$654	\$684	\$715	\$746	\$778	\$810	\$842
\$90,000	\$540	\$570	\$599	\$630	\$661	\$692	\$725	\$757	\$790	\$824	\$858	\$892
\$95,000	\$570	\$601	\$633	\$665	\$697	\$731	\$765	\$799	\$834	\$869	\$905	\$941
\$100,000	\$600	\$633	\$666	\$700	\$734	\$769	\$805	\$841	\$878	\$915	\$953	\$991

**Table 4: HUD Utility Allowances**

	Efficiency	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
Heating	\$6.50	\$9.10	\$11.70	\$14.30	\$18.20
Air Conditioning	\$7.55	\$10.55	\$13.60	\$16.60	\$21.15
Cooking	\$4.25	\$6.00	\$7.70	\$9.40	\$11.95
Water Heating	\$12.80	\$17.90	\$23.05	\$28.15	\$35.80
Other Electric	\$12.85	\$17.30	\$22.25	\$27.20	\$34.65
TOTAL (Heat)	\$36.40	\$50.30	\$64.70	\$79.05	\$100.60
TOTAL (A/C)	\$37.45	\$51.75	\$66.60	\$81.35	\$103.55
TOTAL (averaged and rounded)	\$37.00	\$51.00	\$66.00	\$80.00	\$102.00
<p>Note: These allowances are for all-electric dwelling units and do not include water, sewer or trash collection charges. These numbers are for Orange County; please contact your local housing authority for local HUD utility allowances.</p> <p>Source: HUD.</p>					

## Appendix A: Calculating Affordability

1. For **owner-occupied housing**, monthly costs shall include principal, interest, taxes and insurance (PITI). For owner-occupied, utilities need not be included. Taxes and insurance should be estimated based on local information. Because this methodology assumes a 5 percent down payment, private mortgage insurance should be factored into the cost of the home. Mandatory association fees (e.g., for condominiums), if applicable, shall also be factored into the cost of the home. The employees' income shall be used to calculate the maximum affordable monthly payment. The formula for calculating an affordable mortgage is as follows:
  - $\text{Income} \times 0.3 / 12 = \text{affordable monthly payment}$
  - $\text{Monthly payment} - \text{tax/insurance estimate} = \text{mortgage amount}$
2. Table 3 shows mortgage payments based on home price and interest rates; this table can be used along with any accepted source of current interest rates. Allowing for a 5% down payment, the "affordable" mortgage just calculated would be divided by 0.95 to arrive at a house price.
3. For **renter-occupied housing**, the employees' income is used to calculate the monthly payments they can afford. Costs for utilities should be added using HUD standards for utility allowances. Per unit utility allowances are adjusted for residence size and shall be no less than that used by local housing authorities in the administration of state and federal housing programs. Table 4 shows HUD utility allowances for dwelling units of various sizes. The formula for calculating affordable rental housing costs is as follows:
  - $\text{Income} \times 0.3 / 12 = \text{affordable monthly payment}$
  - $\text{Affordable monthly payment} - \text{utility allowance} = \text{affordable rent}$

## Appendix B: Commute Time/Distance

The housing supply area is determined by measuring a ten mile or twenty minute (whichever is less) commute from the project site. These commute factors are considered to be reasonable for very low and low-income households in terms of travel time and cost.

Reasonably accessible distance and commute times are calculated on the present roadway network and the roadway network projected to be in place at the time of the development impacts of the project. Where possible, estimated commute times should be calculated using the Traffic Analysis Zones (TAZs) commute times in the applicable Metropolitan Planning Organization transportation model. These times will represent the commute time from the TAZ in which the development is located to all other TAZs for which the commute time is twenty minutes or less.

In cases where the TAZ commute times are unavailable, the commute times may be calculated and plotted on the maps of the present roadway network. Using the level of service (LOS) for the roadway at peak hour, convert to travel speeds and plot out commute distances. Allowances may be made for employee peak driving times that differ from standard peak hour, provided that the modification is adequately justified.

Driving distance should be calculated as actual driving distance from the primary entrance of the development to the housing unit and projected actual driving distance and not as a straight radius from the center of the project or its boundaries.

## Appendix C: Maximum Caps for Housing Types

Because smaller housing units tend to be less expensive, it is possible that housing supply inventories will contain disproportionate numbers of smaller housing units (such as efficiencies) because they meet the affordability criteria. In order to ascertain that the housing available within the supply area is adequate to meet the needs of households of various sizes, maximum caps have

been identified according to the size of housing units. These caps were based on persons per household for each county as identified in the 1990 Census. For purposes of this methodology, the maximum number of persons is considered to be 1 per bedroom, except for 1-bedroom units, which can house a maximum of two persons. Efficiencies can house a maximum of one person. The caps are identified in Table 1 for each county.

## Appendix D: Spreadsheet Models

### A Model for Distributing Income and Projecting Affordable Housing Demand

The spreadsheet on the next page shows a wage distribution and affordable housing demand model. Following are the steps taken to arrive at the numbers in the spreadsheet. This model is for a retail wage distribution for a sample project in the Orlando MSA, which is expected to employ 2,000 retail trade employees at an average annual wage of \$19,448. The MSA median income is assumed to be \$48,100.

#### Distributing Income

1. Determine the average wage by SIC Code for retail trade employees. (In this particular case it is \$19,448.) Enter the number of employees and the average wage under Item B and the spreadsheet calculates the total wages. This gives a “control” number - a number against which the total wages of all employees can be measured.
2. Identify the wage ranges to be used in the distribution. (Listed in columns 2 and 3.) In this case we’ve used \$2,500 increments except where the range would cross over an income threshold. In those cases the \$2,500 increment was divided at the threshold. The \$2,500 increment should be the maximum increment used, but smaller increments could be used if desired.
3. Identify the midpoint for each range. (Column 4)
4. Determine the total employees projected to be hired. (In this case, 2,000.) The number of employees in Column 5 should add to this number.
5. The total wages column (Column 6) is actually a formula. The formula multiplies whatever number of employees is entered into the *number of employees* column (Column 5) with the midpoint wage in the *midpoint* column (Column 4). The total at the bottom of the *total wages* column (Item A) is also a formula. This formula adds all the numbers in the *total wages* column, which were themselves arrived at through a formula.

Here’s how this works: Columns 5 and 6 are, respectively, the number of employees column and the total wages column. The total wages are estimated by multiplying the average wage by the total number of employees. (This figure is listed in the last row of the table as item B.) What this spreadsheet does is tell us whether the distribution we pick is probable given the total wages for 2,000 employees. **The object is to have the total of the *total wages* column (Item A) equal or come close to the total annual wages of the 2,000 retail trade employees (Item B).** If these totals are close, then the distribution should be credible.

#### Projecting Demand

6. Once the distribution is complete, the spreadsheet projects employee households by income. The number of employees in each wage range (Column 5) is multiplied by income-specific headship rates from the Census. For this model those rates are as follows: very low income 32.7%; low income 52.0%; and moderate income 66.6%. These numbers mean that 32.7% of very low-income wage earners in Orange County are the heads of their households, while 52.0%

of low-income wage earners and 66.6% of moderate-income wage earners are the heads of their households. The numbers resulting from this calculation are contained in Column 6.

7. Column 7 contains a projection of the households where the DRI employee is the head of the household. The next step is to separate these households into single and multi-worker households. The statistics used to do this are also income specific – they are contained in Table 2. For this model, the percentage of single worker households is 76.8% for very low income; 58.4% for low income; and 38.6% for moderate income. The households in Column 7 are separated according to these percentages; the results are found in Columns 8 and 10, respectively. Note: When additional income is added to multi-worker households, some households will move into the next higher income category.
8. The income for the single worker households (Column 9) is assumed to be the midpoint income from each wage range (Column 4). For multi-worker households, a percentage of additional income is added to the Column 4 figure based upon Census data for additional income for multi-worker households. In Orange County, multi-worker households earn an average of 70.0% more than single worker households (Column 11).

**Note:** Because the spreadsheet is based on the SIC Code income for each type of employee, it is necessary to complete a separate spreadsheet for each type of employee.

## Wage Distribution and Affordable Housing Demand – Model Spreadsheet

Orlando MSA 1999 Median Income: \$48,100

Very Low Income: Less than \$24,050      Low Income: \$24,050 – \$38,499      Moderate Income \$38,500 - \$57,720

1	2	3	4	5	6	7	8	9	10	11
Income group	Low	High	Midpoint	Number of employees	Total wages	Heads of household	Single worker households	Income	Multi-worker households	Income
very low	\$8,250	\$9,999	\$9,125	150	\$1,387,500	55	42	\$9,125	13	\$16,021
	\$10,000	\$12,499	\$11,250	165	\$1,732,500	61	47	\$11,250	14	\$18,186
	\$12,500	\$14,999	\$13,750	225	\$3,093,750	83	64	\$13,750	19	\$23,815
	\$15,000	\$17,499	\$16,250	625	\$10,156,250	230	177	\$16,250	53	\$28,145
	\$17,500	\$19,999	\$18,750	250	\$4,687,500	92	71	\$18,750	21	\$32,475
	\$20,000	\$22,499	\$21,250	175	\$3,718,750	64	49	\$21,250	15	\$36,805
	\$22,500	\$24,049	\$23,275	110	\$2,549,195	40	31	\$23,275	9	\$40,138
low	\$24,050	\$24,999	\$24,525	95	\$2,320,328	54	31	\$24,525	22	\$42,303
	\$25,000	\$27,499	\$26,250	45	\$1,181,250	25	15	\$26,250	11	\$45,465
	\$27,500	\$29,999	\$28,750	40	\$1,150,000	23	13	\$28,750	9	\$49,795
	\$30,000	\$32,499	\$31,250	35	\$1,093,750	20	12	\$31,250	8	\$54,125
	\$32,500	\$34,999	\$33,750	25	\$843,750	14	8	\$33,750	6	\$58,455
	\$35,000	\$37,499	\$36,250	20	\$724,990	11	7	\$36,250	5	\$62,784
	\$37,500	\$38,499	\$38,000	16	\$605,192	9	5	\$38,000	4	\$65,512
moderate	\$38,500	\$39,999	\$39,250	10	\$390,745	7	3	\$39,250	4	\$67,677
	\$40,000	\$42,499	\$41,250	5	\$206,248	3	1	\$41,250	2	\$71,444
	\$42,500	\$44,999	\$43,750	3	\$131,250	2	1	\$43,750	1	\$75,775
	\$45,000	\$47,499	\$46,250	2	\$92,500	1	1	\$46,250	1	\$80,105
	\$47,500	\$49,999	\$48,750	2	\$97,500	1	1	\$48,750	1	\$84,435
	\$50,000	\$52,499	\$51,250	1	\$51,250	1	0	\$51,250	0	\$88,765
	\$52,500	\$54,999	\$53,750	1	\$53,750	1	0	\$53,750	0	\$93,095
(A) total employees and wages of this model				2000	\$36,267,947					
(B) total wages of 2,000 employees at \$19,448*					\$38,896,000					

\* Note: This income is for demonstration purposes only. Please refer to the Dept. of Labor ES-202 report for the latest wage figures.

**Column**

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1. Income thresholds (based on area median income)</li> <li>2. Low end of wages broken down in increments of \$2,500</li> <li>3. High end of wages broken down in increments of \$2,500</li> <li>4. Midpoint of wage ranges</li> <li>5. Employees projected to be in each wage range</li> <li>6. Total wages of all employees in each wage range</li> </ol> | <ol style="list-style-type: none"> <li>7. Heads of Household by income (taken from employees in Column 5)</li> <li>8. Single Worker households (local percentage, from the Census)</li> <li>9. Single Worker household income (same as midpoint in column 4)</li> <li>10. Multi-Worker households (local percentage, from the Census)</li> <li>11. Multi-Worker household income (midpoint in Column 4 multiplied by a percentage additional income, from the Census)</li> </ol> |
|--|--|

## A Model for Calculating Affordability

The affordability spreadsheet takes the number of households and their estimated incomes from the previous spreadsheet and calculates affordable rent, monthly payment, and corresponding mortgage amounts and home prices. To calculate affordability for your area, first sort the households by income from the first spreadsheet\* and copy them to the first two rows of this spreadsheet. Then use local information to determine taxes and insurance and use a current interest rate to determine home prices.

**Note: Affordability in this methodology is defined based on the estimated incomes, not the income thresholds.**

Number of Households	Income	Affordable...				
		Rent	Monthly Payment	Payment Less Taxes and Insurance	7.5% Mortgage	Home Price
42	\$9,125	\$181	\$231	\$208	\$29,766	\$31,332
47	\$11,250	\$213	\$263	\$236	\$33,788	\$35,566
64	\$13,750	\$294	\$344	\$309	\$44,246	\$46,575
13	\$16,021	\$351	\$401	\$360	\$51,554	\$54,267
177	\$16,250	\$356	\$406	\$366	\$52,291	\$55,043
14	\$18,186	\$405	\$455	\$409	\$58,521	\$61,601
71	\$18,750	\$419	\$469	\$422	\$60,336	\$63,511
49	\$21,250	\$481	\$531	\$478	\$68,380	\$71,979
31	\$23,275	\$529	\$579	\$521	\$74,573	\$78,498
19	\$23,815	\$545	\$595	\$536	\$76,634	\$80,668
31	\$24,525	\$561	\$611	\$550	\$78,596	\$82,732
15	\$26,250	\$606	\$656	\$591	\$84,470	\$88,916
53	\$28,145	\$654	\$704	\$633	\$90,568	\$95,334
13	\$28,750	\$669	\$719	\$647	\$92,515	\$97,384
12	\$31,250	\$731	\$781	\$703	\$100,559	\$105,852
21	\$32,475	\$762	\$812	\$731	\$104,501	\$110,001
8	\$33,750	\$794	\$844	\$759	\$108,604	\$114,320
7	\$36,250	\$856	\$906	\$816	\$116,647	\$122,786
15	\$36,805	\$870	\$920	\$828	\$118,435	\$124,668
5	\$38,000	\$896	\$946	\$851	\$121,715	\$128,121
3	\$39,250	\$927	\$977	\$879	\$125,738	\$132,355
9	\$40,138	\$953	\$1,003	\$903	\$129,161	\$135,959
1	\$41,250	\$981	\$1,031	\$928	\$132,737	\$139,723
22	\$42,303	\$1,008	\$1,058	\$952	\$136,127	\$143,292
1	\$43,750	\$1,044	\$1,094	\$984	\$140,783	\$148,193
11	\$45,465	\$1,087	\$1,137	\$1,023	\$146,302	\$154,002
1	\$46,250	\$1,106	\$1,156	\$1,041	\$148,828	\$156,661
1	\$48,750	\$1,169	\$1,219	\$1,097	\$156,872	\$165,129
9	\$49,795	\$1,195	\$1,245	\$1,120	\$160,235	\$168,669
8	\$54,125	\$1,303	\$1,353	\$1,218	\$174,169	\$183,335
6	\$58,455	\$1,411	\$1,461	\$1,315	\$188,102	\$198,002
5	\$62,784	\$1,520	\$1,570	\$1,413	\$202,033	\$212,666
4	\$65,512	\$1,588	\$1,638	\$1,474	\$210,811	\$221,906
4	\$67,677	\$1,642	\$1,692	\$1,523	\$217,778	\$229,240
2	\$71,444	\$1,736	\$1,786	\$1,607	\$229,900	\$242,000
1	\$75,775	\$1,844	\$1,894	\$1,705	\$243,836	\$256,670
1	\$80,105	\$1,953	\$2,003	\$1,802	\$257,770	\$271,336
1	\$84,435	\$2,061	\$2,111	\$1,900	\$271,703	\$286,003

\* Columns 8 through 11

## Appendix E: Data Sources

Variable	Source
Median Income	U.S. Dept. of Housing and Urban Development 301 West Bay Street Suite 2200 Jacksonville, FL 32202-5121
Income thresholds	Very Low: less than 50% of median Low: 50% - 80% of median Moderate: 80% - 120% of median
Average wages by SIC Code	Quarterly Edited ES-202 Report (by County) Florida Dept. of Labor and Employment Security Bureau of Labor Market Information ES-202 Program Phone 904/488-1048

## Appendix F: Department of Community Affairs Letters (see next page)

1. Letter dated June 4, 1996 – Accepting the ECFRPC DRI housing methodology for use throughout the state.
2. Letter dated October 12, 1998 – Accepting the Real Estate Research Consultants supply methodology as an alternative to the MLS/survey methodology for calculating supply.
3. Letter dated June 8, 1999 – Accepting the proposed changes to the ECFRPC DRI housing methodology.

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