

**CITY OF TUCSON GUIDELINES FOR DEVELOPERS AND BUILDERS  
THE REVISED IMPACT SYSTEM**

(Integrated Method of Performance and Cost Tracking)

The IMPACT System (as revised herein and subsequently referred to as the “Revised IMPACT System”) is a means of organizing resource efficiency goals and stakeholder cooperation for sustainable community development and for measuring progress toward those goals over time. ~~It is intended to be~~ The original IMPACT System was adopted by the Mayor and Council of the City of Tucson (the “City”) on October 2, 1995. It was intended to create a cyclical process that:

- \* Is grounded on metropolitan Tucson baseline conditions that are normally documented and periodically updated by community organizations.
- \* Is responsive to community policy priorities that will change over time.
- \* Uses performance targets and specific requirements that exceed baseline conditions without detrimental cost penalties.
- \* Uses collaboration among stakeholders to reach common goals.
- \* Measures development performance and costs to evaluate target achievement.
- \* Enables revisions as baseline conditions improve, and as new targets become technically and economically feasible.

Responsibility for administering the Revised IMPACT System will lie principally with the Civano Community Association (“CCA”). The CCA is the non-profit corporation ~~to be~~ created pursuant to the ~~Civano Amended~~ Covenants, Conditions, and Restrictions ~~(for Civano: The Tucson Solar Village, recorded November 21, 1998, at Docket 10915, Page 639 of the Pima County Records (the “Civano CC&Rs”)),~~ for ~~purposes~~ the purpose of administering the CC&Rs, as described in the ~~State Land Department Civano Master Development Plan, adopted by ASLD on March 5, 1992, as amended by City Ordinance No. 8971, dated October 20, 1997 (the “Master Plan”).~~ The CCA membership will include all owners of ~~Civano~~ property: within Civano.

A key component of the original IMPACT system ~~are two~~ was a Memorandum of Understanding (~~MOUs~~ “MOU”) addressing implementation and monitoring. ~~that was executed on June 26, 1998, pursuant to the Civano Development Agreement adopted on July 1, 1996.~~

A revised MOU (the “Revised MOU”) was subsequently prepared, the primary signatories of ~~the MOU which~~ will be The Master Community of Civano, LLC, an Arizona limited liability company (the “Developer; the City of Tucson, and the Civano Community Association. Secondary parties to the MOU may”) and the City. Entities or organizations that may assist in the implementation of the Revised IMPACT System include:

- \* Arizona Department of Commerce Energy Office
- \* Pima County Wastewater Management Department
- \* Tucson Electric Power Company (“TEP”)
- \* Southwest Gas Corporation (“SWG”)
- \* Pima Association of Governments (“PAG”) Transportation Planning Division.

~~It is envisioned that the MOUs will provide~~The Revised MOU provides for annual or biannual review of goals and accomplishment, to ensure that both the standards and the review process remain current and feasible. The stated policy of the City ~~of Tucson~~ is that Civano maintain the highest possible standards for resource efficiency, and serve as a model for other developments in the United States and worldwide.

Since the CCA will be initially ~~be~~ identical to the ~~master~~ Developer, the City ~~of Tucson~~ is hereby describing its expectations for the initial cycle of development. This will allow prospective bidders to estimate accurately the effect of Civano’s sustainability goals on the project.

The Revised IMPACT System clarifies the “Rezoning Conditions” established ~~in by~~ City ~~of Tucson~~ Zoning Ordinance 7697, adopted October 7, 1991, and will guide the City’s review of subdivision and development plans and initial building permit applications. These guidelines have been developed through participation of the organizations listed above, along with many other interested parties. ~~Prospective bidders at the State Land auction should understand that the developer and builders at Civano will be expected to meet these standards.~~

~~Subsequent to the purchase of the property, the City and master developer will execute the Memoranda of Understanding to implement the performance targets. The City of Tucson~~The City is committed to achieving the original performance targets ~~for Civano~~ over time and does not intend to accept lower performance levels in the initial Memoranda of Understanding. Subsequent amendments to the original MOU and IMPACT System (including this Revised IMPACT System) will reflect the performance targets and goals that are shown by experience to be technically and economically feasible.

As incentive to the developers and builders of Civano, the City ~~of Tucson~~ will develop an extensive support program. This will include educational courses and materials for all designers, builders, and developers wishing to participate in Civano. In addition, the City will extensively promote the Civano development, and its sustainable building standards, throughout the community, beginning well in advance of actual construction at the site. The “Civano Green Building” standards may also be promoted throughout the City on a voluntary basis to encourage resource efficient construction on a broad scale.

The City of Austin, Texas has used this approach very successfully in its Green Builder Program. The City ~~of Tucson~~ recognizes the benefits of such a market-based approach, and intends to

design a similar program for Civano, with support from the Arizona Energy Office and other sponsors. Thus, in exchange for accepting the challenge of higher construction standards, designers and builders will receive substantial support in marketing these advantages. The City will include the names of all participating designers, suppliers, and builders in advertising about the Civano program.

In conclusion, the Revised IMPACT System balances the risks of advanced building methods with the rewards of market support for cooperating designers and builders. The City ~~of Tucson~~ will provide broad and continuing assistance to the ~~master~~ Developer and builders who make Civano a successful model of sustainable development. The following sections summarize performance standards for each resource area. The City will continue to develop information and resource materials to describe these standards in greater detail. The City will implement these standards on a performance basis, so that any reasonable means of achieving the minimum threshold will generally be acceptable. This will foster innovation, variety, and competition among those involved in this dynamic undertaking.

**Goal**

Reduce building energy demand significantly beneath metropolitan Tucson baseline levels with passive and active solar thermal use, and efficient design and construction techniques and equipment. The original Civano target called for 75% savings of all types of energy use.

The Civano Advisory Committee has determined that is not feasible for City agencies, developers, and builders to affect individual consumption of energy through equipment like lamps, computers, and other household appliances. Therefore, the goals described below have been reformulated to address energy use through the building shell, and heating and cooling systems only. These create the largest energy demands in a building, and are the least susceptible to correction after construction; they can also be evaluated in advance through the building permit process. The initial standards will thus reduce residential energy demand by 65% and commercial energy demand by 55%, through improvements to the shell, heating and cooling systems. Individual energy conservation will be promoted throughout Civano, but is not included in these calculations.

**Metropolitan Baseline**

Analysis of 1990 baseline conditions (when the Civano performance targets were established) reveals that single-family residential use was approximately 64,000 BTUs per square foot per year. A Civano Model Energy Code ~~is being~~(the “**Model Energy Code**”) was prepared **in 1990 and revised in 1995** to provide developers and builders with energy demand standards in shell, heating and cooling systems that will reduce **residential** consumption to 20,000 BTUs per square foot per year. Figures for commercial use vary widely, and are thus not listed here. However, commercial energy demand will be reduced by 55% through the **Civano 1990 Model** Energy Code.

**Performance Targets and Specific Requirements**

Based on computer modeling of potential efficiency measures, the following maximum total “energy budgets” are proposed for the indicated Civano building types. The ~~Civano~~-Model Energy Code ~~will describe~~**describes** methods of reducing energy demand by the following percentages:

	Reduction <del>From 1990 baseline</del> <u>1995</u>
Single-family residential	65% <u>50%</u>
Multi-family residential	65% <u>50%</u>
Commercial	55% <u>--</u>

These performance targets have been expressed as “energy budgets” to give builders maximum flexibility in using different approaches to reach the targets. The attached Table A shows how one method, Prescriptive Standards, will achieve that goal. Builders can also use computer models or analysis of building components to effect the same level of savings.

Additionally, there are several specific requirements for all Civano development:

Streets and lots are to be designed so that all structures can be oriented to optimize solar exposure.

All structures must incorporate some beneficial solar application. While solar devices are encouraged, passive solar design which is demonstrated to reduce energy demand will also meet this requirement.

Landscape and hardscape coloration and/or vegetation is to be used to reduce microclimate temperatures adjacent to buildings. The average reflectivity of all major exterior surfaces must be 0.5 or greater on the albedo scale.

### **Implementation Responsibilities**

The Implementation MOU will provide for the following roles:

*Developers/builders.* Layout of streets and lots, and design and construction of exterior spaces and buildings, to achieve the performance targets and specific requirements. Energy analyses will have to be prepared with development and building plans to document predicted target compliance. These analyses can be hand calculated or prepared with computer models, such as those used in the Arizona Home Energy Rating System, or comparable software.

*Civano Community Association Design Review Committee (“DRC”).* Review and approval of ~~development and~~ building plans and energy analyses. The CCA DRC will want to specify the form in which it receives energy analyses, and the specific calculation procedures and computer models it considers appropriate for use. The CCA DRC will also promote energy conservation in the use of household appliances and other consumer equipment, to create an ethic of resource conservation in personal behavior.

*City Development Services Department.* Review and approval of development and building plans (per ~~Ordinance 7697 special~~the Rezoning Conditions and ~~Civano~~the Model Energy Code)

*TEP and SWG.* Provision of technical guidance to developers/builders. Both utilities are considering the type and extent of guidance that may be offered in the future.

### **Monitoring**

The Monitoring MOU will provide for the following:


*Baseline Updating.* Updating responsibility legally lies with the City Development Services Department through future amendments to the building code. Conversion of code and standard construction practice to an updated baseline in the future will be done in coordination with the CCA DRC and the University of Arizona.

*Civano Performance.* TEP and SWG analyses of building energy use and costs; University of Arizona detailed monitoring of specific buildings; and database maintenance by the CCA.

TABLE A

***Comparison of Selected Prescriptive Code Specifications***

Data for MEC92, aZhers, and Good Cents supplied by Tucson Electric Power Company

COMPONENT	MEC'92	AzHERS	TEP Good Cents	 CIVANO
Ceiling insulation	R-25	R-30	R-30	R-38
Sidewall insulation	R-11	R-19	R-19	R-19
Slab perimeter insulation	None	R-5, 2' deep	None	R-5, to bottom of footing, or 1' below grade
Glazing area limit; U-value		15%, U-0.58	15%, U-0.64	Sliding scale: no limit on area, but larger areas require lower U-values. For example, if glazing = 15% of floor area U≤0.52
Exterior doors		U-0.5	U-0.385	U-0.6 (but varies by type)
Heating system efficiency	80%	78% AFUE	80% AFUE	Building must be oriented for optimum solar contribution; remainder supplied at 80% efficiency. Woodstoves and fireplaces must meet EPA pollution standards.
Cooling systems – split - single package	9.4 EER 9.5 EER	10.0 SEER 9.7 SEER	12.0 SEER 12.0 SEER	12.0 SEER 12.0 SEER Refrigerative systems only in combination with evaporative. Sizing limits specified. Alternative technologies must achieve efficiency equal to conventional technology based on energy use per square foot of conditioned space.
Exterior duct insulation	R-6.2	R-5	R-5, ducts must be sealed	R-6.5, ducts must be sealed
Water heating – gas fired		0.55 EF	0.56 EF	Mandatory solar water heating component for primary source of heat. Conventional technology backup permitted. R-10 minimum insulation for tank. Swimming pools solar heated only.
- electric		0.89 EF	0.90 EF	
- heat pump		2.88 EF	2.88 EF	

## Goal

Use on-site solar photovoltaic (PV) and/or solar thermal power generation, and comparable natural gas innovations to provide needed electric and thermal supplies.

## Metropolitan Baseline

At the time of the original IMPACT System, there ~~are~~were no grid-connected solar power installations currently operating in the Tucson area; ~~nor are there~~ or advanced natural gas technology installations such as fuel cells. There ~~are~~were, however, about 50 non-grid connected solar PV units (approximately 100-500 watts each) installed on individual homes and infrastructure throughout Tucson.

As of 2001, Tucson Electric Power (“TEP”) estimates that there may be between 10 and 30 grid-connected solar power installations in the Tucson area. TEP has no statistics for the current number of non-grid connected units.

## Performance Targets

Because of the high costs projected by TEP for solar PV to the year 2000, initial PV use in Civano will likely be limited to a small demonstration installation. A timetable for phasing-in wider use of PVs as economics improve over time will be established between TEP and CCA within the terms of the ~~Implementation~~Revised MOU and consistent with TEP’s state-approved “Integrated Resource Plan.” Solar thermal power facilities will be treated in the same manner.

In addition to solar electricity, consideration will be given to demonstrating advanced natural gas technologies such as fuel cells, which can produce both electricity and thermal energy. Consideration will also be given to district heating and cooling (“DHC”) of the Village’s high density core areas. DHC can be produced with solar energy, natural gas and/or electricity, and can be significantly more efficient than individual single-building heating/cooling systems.

## Implementation Responsibilities

The Implementation MOU will provide for the following roles:

*Developers/builders.* Land set- aside, design and construction of buildings that are compatible with supply technologies being offered in Civano. In particular, roofs must be constructed to accommodate solar equipment.

*CCA DRC.* Review and approval of development and building plans to ensure compatibility with energy supply technologies.

*City.* Cooperation with technology demonstration projects, e.g., solar PV powering of on-site municipal streetlights or pumps.

*TEP and SWING.* Construction and operation of technology demonstrations, and specifically for TEP, a long-range goal to install grid-connected PV and/or comparable renewable technologies when determined to be cost-effective under its “Integrated

Resource Plan” (an exception would be grant funding that could reduce PV costs in advance of market economics). TEP, SWG; and/or another party should also consider operation of a DHC system in Civano’s core area. ~~For example, the CCA could own and operate such a system, and use a portion of its revenues to support other Civano goals, e.g., financial incentives for resident purchases of clean fuel vehicles.~~

### **Monitoring**

The Monitoring MOU will provide for the following:

*Baseline Updating.* Responsibility for updating the baseline will lie with TEP and SWG.

*Civano Performance.* TEP and SWG documentation of supply technology performance and costs, possibly with University of Arizona monitoring assistance. The CCA will ~~again~~ be responsible for database maintenance.

## **Goal**

Reduce potable water consumption significantly below metropolitan Tucson baseline levels; and use non-potable water, such as reclaimed water, graywater, or rainwater harvesting for landscape irrigation- where technically and economically feasible.

## **Metropolitan Baseline**

In 1991, the average annual residential potable water use in metropolitan Tucson was approximately 114 gallons per person per day, ~~and nonresidential use was approximately 40 gallons per person per day. Of the 114 gallon residential usage,~~ Of that amount, the average interior potable water use was approximately 80 gallons ~~were for interior uses~~ per person per day, and the balance was consumed by exterior uses such as landscape irrigation and evaporative cooling. During summer months, the exterior landscape water usage generally equals or exceeds interior use. Nonresidential use was approximately 40 gallons per person per day.

In 2000 (based on a population of 623,017 for metropolitan Tucson), the average annual residential potable water use was approximately 113 gallons per person per day. Of that amount, the average interior potable water use was 68 gallons per person per day. Nonresidential use was estimated at 36 gallons per person per day.

## **Performance Targets and Specific Requirements**

The following performance targets will apply to Civano development:

Residential potable water interior use of 53 gallons per person per day, and a nonresidential potable water interior use of 15 gallons per employee per day (subject to case-by-case review of businesses with above average water requirements, e.g., restaurants). See attached Table B for water use by fixture, including coolers. This results in a 54% reduction of residential interior potable water use, and a substantial reduction for commercial use of potable water. (Exact commercial reductions cannot be estimated due to lack of current data on commercial usage by employees.)

Water budgets will be established for each household, according to Arizona Department of Water Resources guidelines for a maximum of 28 gallons of water per person per day for exterior uses. Private swimming pools will be discouraged, but if installed ~~will reduce the allowable water allotment for landscape irrigation.~~ shall be required to have pool covers installed and may be heated only by solar devices.

The following specific requirements will also apply to Civano development:

Site clearance for residential lots will be limited in order to preserve desert vegetation and maximize natural drainage. A significant portion of each building site must remain as existing natural desert vegetation, with any significant plant species specifically protected. The exact requirement will be negotiated after drainage and other engineering studies have been completed.

City xeriscape landscape standards (Ordinance 7687) will be revised to apply to all uses, including single-family residences, and to all yards and landscapable areas.

All landscape irrigation will be accomplished with ~~non-potable~~reclaimed water, graywater, ~~and/or rainwater harvesting systems,~~ water harvesting systems or other alternative irrigation systems not dependent on potable water. The City's reclaimed water service or ~~rain~~rainwater harvesting/graywater equipment or other alternative irrigation strategies not dependent on potable water will be provided at all Civano properties.

All nonresidential space conditioning system cooling towers rated at one hundred tons or more of cooling capacity will comply with State water conservation standards.

### **Implementation Responsibilities**

The Implementation MOU will provide for the following roles:

*Developers.* Construction of community pools early in each phase of development, to discourage construction of private pools. In Neighborhood One, provision of the City's reclaimed water system, or other non-potable water systems, ~~at Civano~~ for landscape irrigation. This will require coordination with Tucson Water. Compliance with site clearance standards described under Specific Requirements.

In Neighborhoods Two and Three, reclaimed water will be utilized in common areas and for nonresidential uses. Residential uses will utilize rainwater harvesting systems or graywater systems or other alternative irrigation system not dependent on potable water, as permitted by applicable state and City regulations.

*Builders.* Design and construction of buildings in compliance with the performance targets and specific requirements.

~~CCA~~-DRC. Review and approval of developer/builder plans.

*City Development Services Department.* Review and approval of building plans (per Ordinance 7697 special conditions). Landscape and grading plan reviews will also be coordinated at this stage.

*City Water Department.* Continued implementation of water conservation programs, and use of Civano to demonstrate advanced conservation techniques.

### **Monitoring**

The Monitoring MOU will provide for the following:

*Baseline Updating.* Responsibility for updating the baseline will lie with the City Water Department.

*Civano Performance.* City Water Department analysis of Civano water consumption; County analysis of reclaimed water use; University of Arizona detailed monitoring of specific buildings; and CCA database maintenance.

TABLE B

## Interior Residential Water Use Model

		Gallons Per Capita Per Day (GPCPD)
Toilets	5 Flushes X 1.6 gal/flush	8.0
Shower/Bath	7 min/shower X 2.5 gpm X 0.86 showers pcpd	15.0
	25 gal/bath X 0.14 baths pcpd	3.5
Faucets	Kitchen 3.0 gpcpd + Bathroom 2.4 gpcpd	5.4
Dishwasher	12 gal/load X 0.2 loads pcpd	2.4
Clothes Washer	42 gal/load X 0.3 loads pcpd	12.6
Garbage Disposal	None: Composting encouraged	0
Evaporative Cooler	6,000 gal/house/year / 365 days / 2.8 persons	<u>5.9</u>
TOTAL POTABLE WATER USE PER PERSON PER DAY		52.8

Source: Arizona Department of Water Resources

## Goal

Reduce landfill-destined solid waste beneath metropolitan Tucson baseline levels, establish an on-site recycling/composting center, recycle construction waste, and use recycled construction materials.

## Metropolitan Baseline

In 1993, solid waste was generated by Tucson area residences at the rate of approximately 3.1 pounds per day per person, and by commercial uses at the rate of about 6.5 pounds per day per employee. Of these gross generation rates, approximately 0.2 pounds per day per resident and 0.9 pounds per day per employee were recycled. This equates to recycling rates of 6% of residential wastes and 14.6% of ~~commercial~~ nonresidential wastes.

As of 2001, Tucson area residences generated solid waste of approximately 2.93 pounds per day per person, of which approximately 0.26 pounds per day per resident or 9% of residential waste is recycled. The City estimates that 3% of nonresidential waste is recycled.

## Performance Targets

At the outset of development, a recycling target of 30% of wastes will apply to residences and businesses, increasing to 60% by the date at which 1,250 residential units have been constructed. The developer will coordinate recycling programs with the City's Solid Waste Management Department and work with the ~~Community Association~~ CCA to establish the on-site recycling/composting center ~~by the time 1,250 residential units have been built and occupied.~~ Consideration should also be given to development of composting demonstration programs, either on a community-wide basis or for individual residences.

The use of recycled materials in building construction should also be promoted at the outset of Civano development, as should a demonstration of recycling building waste materials from the construction process.

## Implementation Responsibilities

The Implementation MOU will provide for the following roles:

*Developer.* ~~Reservation of~~ Demonstrate efforts and programs to implement waste recycling with builders and homeowners. Report annually to the City on the effectiveness of such waste recycling programs. Reserve an appropriate parcel for ~~siting~~ Civano's recycling and/or composting center.

*Builders.* Design and construction of buildings with built-in recyclables separation features (and hazardous materials storage), and curbside recyclables storage/pick-up areas. Recycled construction materials should be used, and construction waste should be recycled, to the greatest extent feasible.

*CCA DRC.* Review and approval of developer/builder plans. Develop, construct, and operate the on-site recycling/composting center, in cooperation with the City.

*City Solid Waste Management Department.* Provision of curbside pick-up to all uses, including single family, multifamily and commercial, where appropriate; designation of the proposed Civano recycling center as a “Neighborhood Drop-Off Center” within the City’s overall program; and use of Civano as a pilot site for demonstrating new programs and advanced recycling and composting techniques.

**Monitoring**

The Monitoring MOU will provide for:

*Baseline Updating.* The recycling baseline will be updated by the City Solid Waste Management Department.

*Civano Performance.* Cooperative compilation and analysis of Civano solid waste collection records by the Solid Waste Management Department, University of Arizona Garbage Project, and CCA.

## Goal

Improve air quality by reducing auto dependence through: 1) internal Civano circulation via walking, biking and ~~electric car~~other alternative energy-saving transportation methods; and 2) by reducing external vehicle miles traveled (VMT) below metropolitan Tucson baseline levels.

## Metropolitan Baseline

Metropolitan Tucson 1993 baseline transportation demands are summarized in the following Table C.

## Specific Requirements

Significant reductions in auto dependence will be problematic at the outset of Civano development because of the project's distance from major employment and activity centers; and the likelihood that proximate commercial services will be very limited at start-up. Moreover, SunTran's transit plan through ~~1998~~2003 does not contain a bus route serving Civano. Therefore, instead of establishing auto mode shift or VMT reduction targets it is recommended that the following specific requirements be set:

Inclusion of commercial services ~~in Phase 1~~ within walking/bicycling distance of ~~Phase 1~~Neighborhood One homes.

Extension of one or more bus routes to Civano during ~~Phase 1. An alternative could be a Civano developer sponsored shuttle service to the nearest Sun Tran express route and/or park and ride lot.~~Neighborhood One.

~~Ensuring~~Ensure that a pedestrian and bicycle-friendly built environment will be essential at the outset of development. Therefore, each development phase will provide for a majority of through streets (versus cul-de-sacs); and construction of a system of sidewalks or bike or multi-purpose paths; and nonresidential uses will have orientation and access emphasis on pedestrian /bicycle linkages rather than auto linkages.

~~Consideration by the master developer and Civano Community Association of adoption of the California Clean Fuel Vehicle standards, to be phased in as residential occupancy reaches specific milestones (e.g. 10%, 20%).~~

## Implementation Responsibilities

The Implementation MOU will provide for the following roles:

*Developers.* Develop land-use mix and density, and internal circulation system, to minimize internal auto travel. The ~~Phase 1~~Neighborhood One developer(s) will have to include a nonresidential component; and all developers, regardless of phase, will have to construct a pedestrian/bicycle circulation system.

*Builders.* Design and construct buildings and sites with emphasis on pedestrian, bicycle, and transit access; ~~also provide electric cart charging facilities.~~

*CCA DRC.* Review and approve developer/builder plans.

*SunTran.* One or more bus routes (preferably express lines) should be extended to the Village as soon as practical. Also, consideration should be given to siting the proposed Eastside Transit Center at or adjacent to Civano in coordination with the following land-use recommendation.

*City Planning and State Lands Departments.* Consideration will be given to land-use designations that create a pattern of high-density, mixed-uses along Houghton Road in the vicinity of Civano. Achievement of Civano's transportation demand goal will be substantially strengthened if the general vicinity becomes a larger node of concentrated urban activities. This is already occurring to a certain extent with development of the nearby Rita Ranch project and the University of Arizona's ~~conversion of the IBM plant into a research park and possible satellite campus~~ Science and Technology Park and associated development.

### **Monitoring**

The Monitoring MOU will provide for:

*Baseline Updating.* PAG Transportation Planning Division responsibility for baseline updating.

*Civano Performance.* PAG Transportation Planning Division and University of Arizona analyses of Civano travel demand, with CCA database maintenance.

**Table C**  
**METROPOLITAN TUCSON TRAVEL DEMAND CHARACTERISTICS**  
 (1993 PAG Transportation. Planning ~~Div.~~ Division)  
 Daily VMT Per Capital  
 18 miles (all trip types)  
**Autos Per Dwelling Unit**

Owner-occupied	1.8	Renter-occupied	1.2
<b>Trip Purpose</b>			
	<b>% of Weekday Trips</b>		<b>% of Saturday Trips</b>
<b>Trip Purpose</b>			
Home	36		37
Work	13		4
School	6		<1
Shopping	11		20
Medical	2		1
Social/Recreational	12		23
Other Personal Business	7		7
Work Related	3		1
Pick Up/Drop Off Passenger	8		5
Change Mode of Travel	2		2
Other	<1		<1
	100		100

<b>Trip Mode</b>		
	<b>% Weekday Trips</b>	<b>% Saturday Trips</b>
<b>Mode</b>		
Driver	64	58
Passenger (includes carpool and vanpool)	21	33
SunTran	2	<1
School Bus	2	<1
Bicycle	2	<1
Walk/Jog	8	2
Taxi/Soc.Svc/Special Bus	<1	7
Other	<1	<1
	100	100

Percentages may add up to more than 100% due to rounding.

## Goal

Create one job within Civano for every two dwelling units.

## Metropolitan Baseline

The City Planning Department indicates that very few development projects in metropolitan Tucson have had a mix of housing and employment located on the same site. Rita Ranch is an example of the very limited type of mixed-use development to date in the community.

## Specific Requirement

A minimum of 300 sq. ft. of nonresidential floor area (equivalent to work space for a typical office employee) will be constructed for every two dwelling units built. Credits will be allowed for homes constructed with built-in dedicated office space. This requirement is also consistent with the transportation objective of planning for nonresidential uses at the outset of Civano development.

## Implementation Responsibilities

The Implementation MOU will provide for the following roles:

*Developers/builders.* Development and construction of residential and nonresidential uses in ratios that achieve the specific requirement. Design of telecommunications capacity to enable expansion of fiber optics or similar infrastructure to all commercial and home office locations. Initially, this may consist of placing conduit to allow expansion of telecommunications capabilities as the population at Civano grows and demands such services.

*CCA DRC.* Review and approval of developer/builder plans.

*City Office of Economic Development and Greater Tucson Economic Council.* Commitment to actively recruit employers for location in Civano.

*City Planning and State Land Departments.* Consideration of land-use designations that increase employment opportunities and services in the vicinity of Civano. Goal achievement will be strengthened to the extent that the general vicinity becomes recognized as an employment center. As noted earlier, this trend is already underway at Rita Ranch and the ~~former IBM plant~~ [University of Arizona Science and Technology Park](#).

## Monitoring

The Monitoring MOU will provide for:

*Baseline Updating.* Responsibility for baseline updating will lie with the City Planning Department.

*Civano Performance.* CCA surveying of Civano employment versus dwellings built.

**Goal**

The average wage of Civano jobs should enable employees to afford the average cost of Civano housing.

**Metropolitan Baseline**

According to the Tucson Chamber of Commerce, in 1993 the average price of a new home in metropolitan Tucson was \$109,000, and the average rent for a new apartment was approximately \$550 per month.

**According to statistics compiled by the City's Comprehensive Planning Task Force, the average sales price for a single family home (both new and resale) as of May 2003 was \$193,561. The estimated monthly rental for a two-bedroom apartment for 2004 is \$707.**

**Performance Target**

The Civano Master Plan cites a range of single-family dwelling prices of \$99,000-134,000; and apartment rental rates of \$400-670 (these are 1989 estimates escalated to 1994 dollars). When compared to the baselines, the Civano price range implies apartment affordability, but suggests difficulty in home affordability for lower wage groups, e.g., retail/service employees.

A widely-used market share goal for low and moderate-income housing is 20% of the dwellings in new projects. Therefore, the CCA DRC will ensure that at least 20% of the eventual total number of all dwellings are priced for low and moderate-income households (defined by HUD as 80% or less of the local median household income); and that the affordable housing include all dwelling types built in Civano. This goal will be reviewed periodically, but the exact percentage is anticipated to vary year-by-year. It is reasonable to expect approximate conformance with the goal at the stages when 25%, 50%, and 75% of all residential units have been built and occupied, to ensure that the goal is achieved at 100% completion. However, developers and builders will be afforded some flexibility within those intervals.

**Implementation Responsibilities**

The Implementation MOU will provide for the following roles:

*Developers/builders.* Design, construction and marketing of residences in accordance with the affordability target to the extent that assistance is available from public agencies, foundations, and other sources to finance and construct affordable housing.

*CCA DRC.* Review and approval of developer/builder plans.

*City Community Services Department.* Assistance to developers/builders that may participate in low and moderate-income housing programs. Other non-municipal organizations can also assist developers/builders with these programs, such as Chicanos Por La Causa, Habitat for Humanity, and the Tucson Urban League.

**Monitoring**

The Monitoring MOU will provide for:

*Baseline Updating.* Responsibility for baseline updating lies with the City's Community Services Department.

*Civano Performance.* CCA surveying of Civano employees who reside on-site.