

**Figure 9.5** Graph showing the changes in key demographic indicators between 2000 and 2030

The forecasts are showing that the population, households and employment will grow through 2030 with population growing at greater pace mostly due to in-migration from Mexico. The increase in the single-parent households and the increase in life expectancy are two examples of conditions that are combining to push the number of households. Households are the prime generator of trips, thus, the increase in the number of households results in more trips, which generate more congestion. There is also an increasing trend in the household size through 2030. The increase in the retail employment percentage through 2030 indicates the shift of the economic activity to the retailing from basic employment (agriculture, manufacturing etc.).

### Land Use and Scenario Planning

In 2007, staff developed a “base year” land use map as a foundation for beginning a land use initiative. The “base year” map revealed a great deal of information and a subcommittee was formed to address issues such as sprawl, true cost of expansion, and the needs that sprawl created on transportation and infrastructure. As part of the subcommittee staff formed outside relationships with organizations such as Los Caminos del Rio and the Lower Rio Grande Valley Trails Network. The Lower Rio Grande Valley Trails Network anticipates the creation of 80 miles of trails along irrigation and drainage

ditches or levees in existing rights of way in Webb, Zapata, Starr, and Hidalgo and Cameron counties for cycling and hiking.

Upon completion of the ‘base year’ staff learned of an information sharing opportunity , the Peer to Peer exchange program, provided by FHWA on Land Use Planning. HCMPO applied for and was approved to attend a peer exchange program with the North Front Range MPO, in Colorado. Staff as well as a subcommittee member, Ed Taylor with the City of McAllen, attended the exchange program and learned of alternative methods used by the North Front Range MPO in land use and scenario planning. Upon completion on the peer program HCMPO staff realized that the planned method for land use planning was to time consuming and that methods learned from the peer program would be shorter and more cost effective.

HCMPO staff have decided to attempt, via a professional consultant contract, to perform the first ever scenario based forecast model for the 2035 Metropolitan Transportation Plan. It is the intention of staff to hold several public workshops that would assist staff and the TPC in making proper decisions regarding which type of scenarios are best and most financially feasible to plan for. Staff believes that this would be the most accurate forecasting method for future transportation needs ever developed by the HCMPO. Scenario planning methods will allow staff to properly model commercial and residential development based upon the outcomes of the scenario planning process.

### **People are moving within the region**

Demographic forecasting process also consists of determining how the regional control totals for population, household, and employment will be distributed within the region in the future years. The Hidalgo County metropolitan area has been divided into --- Traffic Analysis Zones (TAZ). The TAZ structure is how the travel demand model disaggregates the region for the purpose of forecasting the utilization of the transportation network in future years. Thus each TAZ has its share of the population, household, and employment regional totals. Historical data for each TAZ was utilized to determine the growth trends in the number of households and the population. Based on the experience of prior demographic forecasting experiences, adjustments were made where trends did not follow a reasonable pattern.

Table 9.5 and Table 9.6 shows the distribution of the population and employment distribution respectively according to the MPO's Planning areas, based on 1990 and 2000 Census data and MPO's forecasts. The data show the proportion, or share, of the total population in the region that corresponds to each planning area.

**Table 9.5** Population Distribution within the MPO Study Area planning areas

Planning areas	1990	2000	2005	2010	2015	2020	2025	2030
North West	3.08%	1.55%	1.72%	1.42%	2.21%	2.45%	2.89%	2.97%
West Urban	12.78%	15.21%	16.22%	16.62%	17.09%	17.75%	18.82%	19.15%
South West Urban	4.10%	5.60%	5.76%	5.80%	5.73%	5.66%	5.73%	5.52%
North	6.37%	6.37%	5.90%	6.34%	7.28%	7.58%	8.02%	8.07%
Metro Core	29.09%	27.74%	26.20%	25.32%	24.10%	21.74%	20.92%	20.73%
South Metro Core	12.43%	13.38%	13.56%	13.41%	12.75%	11.95%	11.38%	10.66%
North East Rural	5.37%	4.02%	4.13%	4.38%	4.31%	3.89%	5.40%	5.47%
East Urban	14.24%	14.46%	14.47%	14.75%	15.01%	15.55%	16.42%	16.31%
South East Urban	12.09%	10.71%	10.80%	10.94%	10.84%	10.82%	10.86%	10.57%
Rural	0.45%	0.28%	0.32%	3.45%	0.41%	0.48%	0.56%	0.55%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>

**Table 9.6** Employment Distribution within the MPO Study Area planning areas

Planning areas	1990	2000	2005	2010	2015	2020	2025	2030
North West	NA	0.04%	0.13%	0.19%	0.25%	0.35%	0.39%	0.52%
West Urban	NA	9.79%	9.08%	8.91%	8.87%	8.89%	8.95%	9.00%
South West Urban	NA	2.95%	2.88%	3.10%	3.52%	3.87%	4.07%	4.41%
North	NA	8.24%	7.88%	7.75%	7.82%	7.82%	7.90%	7.81%
Metro Core	NA	33.77%	36.45%	35.17%	34.38%	34.14%	33.92%	33.59%
South Metro Core	NA	25.89%	24.57%	25.14%	25.01%	24.50%	24.05%	23.66%
North East Rural	NA	1.63%	1.76%	1.76%	1.88%	2.00%	2.16%	2.29%
East Urban	NA	10.84%	10.76%	11.61%	11.87%	12.45%	12.14%	12.27%
South East Urban	NA	6.79%	6.41%	6.65%	6.53%	6.31%	6.33%	6.28%
Rural	NA	0.05%	0.08%	0.07%	0.07%	0.07%	0.07%	0.07%
<b>Total</b>	<b>na</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>

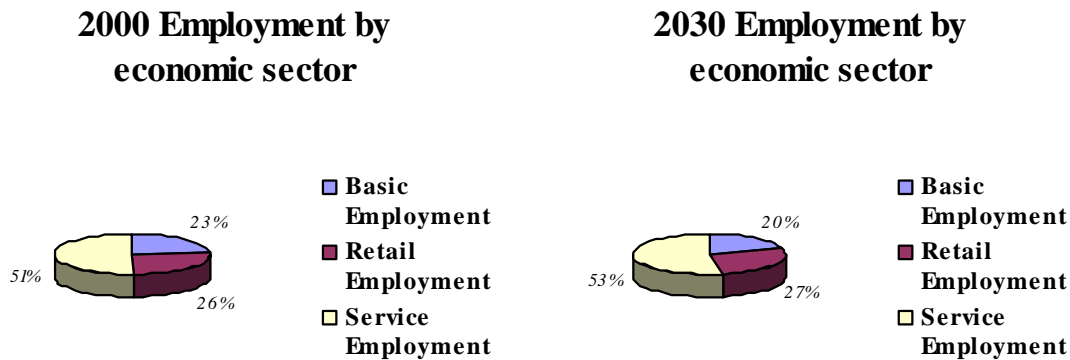
In the population distribution table, there is a decrease in population in the Central Core area. This is mainly due to the increase in the retail economy in this area the people are moving to other parts of the planning areas. This can be justified with the Employment distribution table in which the majority of the employment is concentrated in the Central Core area. Historically the Mid-valley was the largest concentration when the Basic sector of the economic focus of the valley. Since 1950, Retail Sector has been expanding and McAllen (Central Core area) has been the focus. Finally all of the Hidalgo County has been growing just parts of it have been growing faster. Also Table 9.7 shows the distribution of

type of employment in the Hidalgo County MPO Study Area planning areas for the year 2000.

**Table 9.7 Distribution of the Employment by Economic Sector within MPO Study Area planning areas**

Planning areas	Total	Total %	Basic	Basic %	Retail	Retail %	Service	Service %
North West	66	0.04%	12	0.03%	4	0.01%	50	0.06%
West Urban	14,963	9.79%	2,692	7.53%	4,938	12.44%	7,333	9.49%
South West Urban	4,511	2.95%	992	2.77%	1,521	3.83%	1,998	2.59%
North	12,591	8.24%	3,082	34.96%	3,051	7.68%	6,458	8.36%
Metro Core	51,608	33.77%	12,505	34.96%	11,359	28.60%	27,744	35.92%
South Metro Core	39,568	25.89%	8,591	24.02%	12,015	30.26%	18,872	24.43%
North East Rural	2,488	1.63%	890	2.49%	628	1.58%	970	1.26%
East Urban	16,566	10.84%	4,771	13.34%	3,972	10.00%	7,823	10.13%
South East Urban	10,377	6.79%	2,172	6.07%	2,217	5.58%	5,988	7.75%
Rural	79	0.05%	65	0.18%	5	0.01%	9	0.01%
<b>Total</b>	<b>152,817</b>	<b>100.00%</b>	<b>35,772</b>	<b>23.41%</b>	<b>39,710</b>	<b>25.99%</b>	<b>77,245</b>	<b>50.55%</b>

Figure 9.6 shows the distribution of the Employment by economic sector for the years 2000 and 2030 respectively.



Basic Employment – goods producing industry  
 Retail Employment – industry  
 Service Employment – includes transportation, communications, electric, gas, and sanitary services; wholesale trade; retail trade; finance insurance, and real estate; and services.

## **Applications by MPO and Transit Operator**

Travel Demand Forecasting Model has been adopted by the MPO for Highway Planning. This model is not applied for Transit planning. This is due to the limited transit facilities in the Hidalgo County. In the near future MPO is planning to use the Travel Demand Model for the Transit also.

## **Applications of TDM by MPO**

The Travel Demand Model has been used as the major criteria for the project selection process in the 2030 Metropolitan Transportation Plan of the Hidalgo County.

### **Criteria for Project Selection for the Metropolitan Transportation Plan.**

Project selection is the result of two sequential processes: development of the Transportation Improvement Program (TIP) and development of the twenty-five-year Metropolitan Area Transportation Plan (MTP). ISTEA introduced new objectives and values into the decision-making process to open it up to input from citizens and special interest groups. In the preparation of this plan update, parties representing diverse points of view were given opportunities to be heard via a series of public outreach instruments described in section 9.6 and appendix A.

TEA21 gives no absolute authority to either the State or the MPO in selecting which projects will be funded. The law stresses cooperation, and assigns a leading role to either the State or the MPO depending on the situation. In addition, the State and MPOs are required to certify to FHWA that the joint planning process is “continuing, cooperative, and comprehensive.”

For areas with population of 200,000 and over such as the Hidalgo County MPO (HCMPO) the State (in cooperation with the MPO) has oversight over projects to be funded from TEA21's National Highway System (NHS), Bridge, Interstate, and Federal Lands Program. For projects funded by all other TEA21 programs (such as the Surface Transportation Program or the Congestion Mitigation and Air Quality program), the MPO has selection power in cooperation with the State.

Just like in 1999, when it came time to update the Metropolitan Plan, the MPO Technical Committee had several issues to deal with. One important issue is that while the Transportation Improvement Program (TIP) is the implementation tool of the MTP there are several valid reasons to have different criteria for 25 years worth of projects than 3 years of projects identified in the TIP. For example, the status of right of way (ROW) is very important when we build the projects in the TIP but until that time the need for a project should outweigh the ease of construction of projects. If we used the TIP criteria especially for selecting 25 years of projects some valuable but difficult projects would not get selected. If the criteria for the MTP and TIP are too radically different, then a conflict of priority can occur. To prevent confusion the Technical Committee developed Four (4) criteria for a maximum of One Hundred (100) points to prioritize groups of projects for the Metropolitan Transportation Plan (MTP).

Another goal of developing this plan update was to keep it simple so the public could understand the whole reasoning in project selection and the decision makers could use this plan effectively. In other words, the MPO Technical Committee was striving to make this complex transportation plan as user friendly as possible. Because we are required to update this plan in the year 2009, the Hidalgo County MPO decided to attempt a simple, easy to understand selection criteria for a twenty five year plan and thinks it has a solid enough TIP selection process to compensate for the plan if the update does not work as intended.

The Hidalgo County MPO will be evaluating this process throughout the five years between 2004 and 2009 and will make adjustments to the process in 2009 as needed. The current TIP (Figure A) is through the year 2006 and the next TIP process will be selecting projects from this plan through the years 2006 to 2008. This plan update is a bold step in the spirit of TEA21 to bringing the transportation planning process out of the hands of the technocrats and placing it in the hands of the public. While the criteria look simple there is a lot of data that goes into each one and it has solid transportation planning theory behind it.

<b>Figure A: Mobility Funds Selection Criteria HCMPO-as of 9/7/04</b>			
<b>Transportation Indicator</b>	<b>Point Distribution</b>	<b>Total Possible</b>	<b>% of Total</b>
Spring FY 2004 CMS	No network=0 Green=5 Yellow=15 Red=25	25	25
Cost Effectiveness from Forecast Year (cost/traffic)	0 5 15 20 25	25	25
<b>LOS Base Year Model (From TDM)</b>	<b>F=25 E=20 D=15 C=10 B=5 A=0</b>	<b>25</b>	<b>25</b>
<b>LOS Forecast Year Model (From TDM)</b>	<b>See Figure B</b>	<b>25</b>	<b>25</b>

Projects that were identified in the MPOs Spring Congestion Management Study (CMS) were identified for the criteria selection and distributed points based upon the congestion levels identified in the CMS. Red, the most congested, was awarded 25 points, Yellow, which is stable, 15 points and Green, free flow, was awarded no points. The Criteria subcommittee also reviews the Level of Service (LOS) for the base year, 1999, and the transition of LOS from No Build scenario to forecast year 2030. Based upon information given on the LOS, points were awarded based upon the level of service identified for the base year and the transition of LOS from No Build scenario to forecast year. However, the scoring works differently for each year based upon the LOS. In the base year point were distributed with the greatest amount of points given to the most congested corridors, as shown in figure A, LOS F was given 25 points while LOS A was awarded 0 points.

Points were distributed for forecast year 2030 based on the transition of LOS from No Build scenario to the forecast year 2030 model with the MTP projects incorporated in it. The point distribution in this case can be better understood in the Figure B. For instance, if a project has a LOS “F” in the No Build scenario and the same project, after improvements in the forecast year 2030 has a LOS “A” it was awarded 25 points since it showed a great deal of improvement to LOS from the no build scenario.

Finally the Data Criteria sub-committee evaluated the need to identify those projects that were truly cost effective as well as addressing the level of service of a corridor. Those projects that were identified as the most cost effective were awarded a greater number of points than those that were not identified as cost effective. This process assured that those projects that were truly identified as needed and were the most cost effective received the greater amount of points and thus were ranked higher.

No Build Level of Service	Forecast Year 2030 Level of Service (From TDM)						
		A	B	C	D	E	F
	A	0	0	0	0	0	0
	B	5	0	0	0	0	0
	C	10	5	0	0	0	0
	D	15	10	5	0	0	0
	E	20	15	10	5	0	0
	F	25	20	15	10	5	0

**Figure B:** Score Distribution for Project Selection Based on LOS

## Addressed in agreement between MPO and TXDOT

**Responsibilities of the TXDOT.** The responsibilities of the department are as follows:

- ❖ Make available to the MPO the appropriate federal transportation planning funds and the required non-federal, in-kind matching funds as authorized by the Texas Transportation Commission. Federal transportation planning funds will be distributed to the MPOs based on a formula mutually agreed to by the department, Federal Highway Administration (FHWA) and Federal Transit Administration (FTA).
- ❖ Provide, as appropriate, technical assistance and/or guidance in the collection, processing, and forecasting of socio-economic data needed for development of traffic forecasts and planning proposals within the Metropolitan Planning Area.
- ❖ Collect, process and forecast vehicular travel volume data in cooperation with the MPO.
- ❖ Jointly promote the Intermodal development of the State's transportation system within the Metropolitan Planning Area by identifying points in the system where access, connection and coordination between the modes and inter-urban facilities would benefit the entire system.
- ❖ Share information and information sources concerning transportation planning issues.

**Responsibilities of the MPO.** The responsibilities of the MPO are as follows:

- ❖ Use funds provided in accordance with (TXDOT responsibilities) to develop and maintain a comprehensive regional transportation planning program in conformity with requirements of 23 USC Section 134(f) and 49 USC Section 5303.
- ❖ Assemble and maintain an adequate, competent staff to perform all appropriate MPO activities required by law. A "Transportation Planning Director" shall be designated to administer the program. The Transportation Planning Director, who shall serve in a full time capacity for Transportation Management Areas, shall take

planning policy direction from and be responsible to the designated MPO Transportation Policy Board. For the non-Transportation Management Areas, the Transportation Planning Director shall take planning policy direction from and be responsible to the designated MPO Transportation Policy Board. All MPO Transportation planning staff shall be supervised by the Transportation Planning Director regardless of agency affiliation.

The Transportation Planning Director shall also act as a liaison to the department's transportation planning program through the department's district offices and the department's Transportation Planning and Programming Division's representative.

- ❖ All employees of the MPO shall have such knowledge and experience as will enable them to perform the duties assigned to them.
- ❖ Collect, maintain, forecast and report to the department on a timely basis appropriate socio-economic, roadway and travel data, in cooperation with Texas Department of Transportation.
- ❖ Maintain required accounting records for state and federal funds consistent with current federal and state requirements.
- ❖ Prepare all required plans, reports, programs, data and certifications in a timely manner.
- ❖ Develop a Metropolitan Transportation Plan, a Transportation Improvement Program and a Unified Planning Work Program for the Metropolitan Planning Area that will complement the Statewide Multimodal Transportation Plan required by the state and federal law. At a minimum the MPO shall consider in their planning process the applicable factors outlined in 23 USC Section 134(f).
- ❖ Share information and information sources concerning transportation planning issues.

## **Role of Technical Advisory Committee (TAC) in reviewing assumptions and methodology**

The Technical Advisory Committee (TAC) has a major role in the decision making along with MPO. The role of TAC is to:

- ❖ Provide the assumptions for developing the Travel Demand Forecasting Model
- ❖ Provide documentation of the assumptions showing the reasons for the assumptions
- ❖ Provide Data Resources for example identifying the school attendance zones
- ❖ Provide Zoning data (land use density)
- ❖ Developing the selection criteria for Metropolitan Transportation Plan (MTP) and Transportation Improvement Program (TIP)
- ❖ Develop total MTP project listing and provide important data for some off system projects for which TXDOT does not have any information
- ❖ Come up with Final MTP Project Listing before the adoption of the Transportation Policy Committee (TPC).