COMPREHENSIVE
PLAN & STATE OF
THE CITY
FORWARD

In June of 1993, the Department of Landscape Architecture & Urban Planning at Texas A&M University formally initiated the Texas Target Cities Program. Under this program, a city is selected to serve as a real world learning laboratory for graduate students. The program was created for two reasons. First, it provides students with educational experience that is enhanced and made more relevant through the application of instruction and course work on actual problems and issues. Second, the targeted community receives valuable assistance that can make a positive difference in the quality of life for its residents.

The municipality selected as the Target City for academic year 2000-2001 was Lorena, Texas. The purpose of this document is to present a comprehensive plan and associated elements for the development of the City of Lorena.

The planning process associated with the production of this document began in the fall of 2000. Students from the Master of Urban Planning degree program began a nine-month sequence of graduate courses dedicated to the analysis of data and the preparation of this plan. Applied Planning I, taught in the fall of 2000 was used for the purpose of data acquisition and analysis. Applied Planning II, in the spring 2001 was used primarily for the purpose of plan formulation. A third course, Plan Implementation, served as a vehicle for addressing ideas related to a revision of the Lorena Zoning Ordinance.

Several other individuals and groups also participated in this process. Their work is included in this document. Professor David Ekroth directed two groups of architecture students in the production of conceptual designs for a new municipal building. Two graduate landscape architecture students also participated. Jennifer Mullens produced conceptual designs for downtown renovation. Diane Johnson worked on gateway concepts and was responsible for the design of the Lorena logo used on the cover and elsewhere in this document.
The document is structured in four parts. Part 1 consists of the State of the City. It contains an introduction and a review of the existing community. Part 2 contains the Comprehensive Plan. This part contains proposals for improving the long-range development of Lorena. The third component contains Jennifer Mullens master plan for downtown revitalization. The fourth and final component contains the conceptual designs from Professor Ekroth's architecture students.
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</tr>
</tbody>
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STATE OF THE CITY
SECTION

1

Introduction
Introduction

The State of the City component of the Comprehensive Plan provides a context for the entire planning process. The document provides an overview of the City while offering insight into the development and growth patterns of the community. The ultimate goal of the State of the City process is to ensure that the City and its needs are accurately identified and understood so that the planning process can be as beneficial and efficient as possible. The ultimate goal of the planning process as a whole, both the State of the City and the Comprehensive Plan, is to assist the citizens of Lorena in planning for growth while maintaining an optimum quality of life.

THE PROCESS

Throughout the State of the City documentation and analysis process, facts about the City of Lorena are gathered and their role in the well-being of the City is studied. The State of the City process and document provide a snapshot of current conditions in Lorena.

Topics addressed include:
- Historic and Regional Setting
- Natural Environment
- Demographics
- Local Economy
- Land Use
- Housing
- Transportation
- Urban Infrastructure
- Community Facilities and Services
- Community Image
- Historic Resources
All of these things contribute to the quality of life in Lorena. Each section includes information about the topic and its importance to the City including graphical support where appropriate.

The State of the City document will facilitate the development of goals and objectives for the Comprehensive Plan by providing an accurate, current context for planning. The goal of this report is to identify those resources that should be capitalized upon as well as those areas that need improvement.
SECTION

2

Historic and Regional Setting
Section 2

Historic and Regional Setting

INTRODUCTION

Understanding how a community and its surrounds has grown over time is the first step towards effective planning. This section provides a brief introduction to the development of the City of Lorena and defines its location within McLennan County and the State of Texas.

REGIONAL SETTING

The City of Lorena is in the Central Texas Growth Corridor on Interstate 35 (I-35), thirteen miles south of Waco and seven miles south of Hewitt in McLennan County. The Lorena City Limits encompass 2.13 square miles. Waco's southern extra-territorial jurisdiction (ETJ) ends one-half mile from the northern boundary of the Lorena City Limits and forms a semi-circle around the northern half or Lorena. Lorena's location on I-35 has encouraged the development of the city as a 'bedroom community' of Waco to the north and Temple 21 miles to the south. Lorena is 107 miles south of Dallas, 88 miles north of Austin, and approximately 220 miles northwest of Houston.

HISTORY OF LORENA

Settlers began arriving in the Lorena area in the 1850s. Counted among the most prominent founding families were the Aels, Westbrooks, and Stanfords. The town was laid out in 1881 when Lorena was established as a station on the Missouri-Kansas and Texas (Katy) Railroad. When Daniel

City of Lorena, Texas 5 State of the City - 2000
Aerl learned of the Katy's plans to extend the line south of Waco he donated land for the right of way. The town was named in honor of Lorena Westbrook Robertson, eldest daughter of the prominent Westbrook family.

In 1882 a post office was established with Charles F. Schafer as postmaster. The Lorena post office is one of sixteen remaining in McLennan County today, significantly less than the eighty-two that had been established by 1900. The Methodist church was constructed in 1886. By 1890 Lorena had 250 residents, two churches (Baptist and Methodist), a school, a grocery and general store, a cotton gin, and a mill. Population estimates rose to 375 in 1892 and to 500 in 1896. "As early as 1894 H. J. Hudson who had come from Cambridge, England, had organized a private bank which was chartered in 1909 as the Lorena State Bank. In 1914 the First National Bank of Lorena was established by A. B. Stanford and R. S. Barns. The two banks consolidated in 1922."

Throughout the 1930s and 1940s the population of Lorena remained steady at 342 even while the number of businesses fell from twenty-two to seven between 1933 and 1945. Lorena's estimated population fell to 242 during the 1950s. The local economy received a boost during the 1950s and 1960s when the Interstate Highway Act developed I-35 along U.S. Highway 81. The community, which incorporated in 1959, continued to grow. Some families moved to Lorena from Waco, finding it pleasant to live in a smaller town and commute to work. Lorena had an estimated 437 residents and nine businesses in the mid-1960s, 516 residents and twenty-two businesses in the mid-1970s, and 745 residents and thirty-four businesses by the late 1980s. In 1991 Lorena reported a population of 1,244 and eighty-two businesses.

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4 "LORENA, TX." The Handbook of Texas Online.
5 Poage, 264.
6 "LORENA, TX." The Handbook of Texas Online.
SECTION 3

Natural Resources
INTRODUCTION
This section will familiarize the reader with the natural resources and environmental conditions of the Lorena area. The analysis of these data provides a standard in preparing for future development. Topics addressed include Topography, Soil, Water, Mineral Resources, Climate, Air Quality, Wildlife and Vegetation, and Hazards.

TOPOGRAPHY
Lorena's elevation is between 550 and 650 feet above sea level. Most of the land has a slope of less than five percent; however, there is some land with a slope greater than five percent in the southern portion of town, just east of Interstate 35 (I-35). Therefore, slope does not present any significant problems for construction in most of the Lorena area. Map A-2 shows the topology of the Lorena area.
SOIL

There are fourteen soil series (Stephen, Austin, Houston Black, Eddy, Sunev, Fairlie, Lewisville, Branyon, Frio, Dams, McLennan, Ovan, Lott, and Tinn) within the Lorena City Limits and extraterritorial jurisdiction (ETJ). Among them, only seven (Stephen, Austin, Houston Black, Eddy, Sunev, Fairlie, and Lewisville series) are within the City Limits. The residential and commercial districts are located predominantly in the Stephen and partially in the Fairlie and Austin series as shown on Table 3.1 and Map A-4. According to the following soil data, the levels of shrink/swell are high in the Lorena area. This means that without supplemental devices on building foundations structural problems may occur.

Table 3.1 Major Soil Series in Lorena

<table>
<thead>
<tr>
<th>Series</th>
<th>Stephen series</th>
<th>Fairlie series</th>
<th>Austin series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristic</td>
<td>Silty clay</td>
<td>Silty clay loam</td>
<td>Silty clay</td>
</tr>
<tr>
<td>Permeability</td>
<td>Moderate to high</td>
<td>Low</td>
<td>Moderate to high</td>
</tr>
<tr>
<td>(Inch/Hour)</td>
<td>0.2 - 2.5</td>
<td>0.05 - 0.15</td>
<td>0.2 - 2.5</td>
</tr>
<tr>
<td>Shrink/Swell</td>
<td>High</td>
<td>Very high</td>
<td>High</td>
</tr>
<tr>
<td>Cotton, corn, grain</td>
<td></td>
<td>Cotton, grain</td>
<td></td>
</tr>
<tr>
<td>Suitable crops</td>
<td>Small grains</td>
<td>sorghums, small</td>
<td>sorghums, small</td>
</tr>
<tr>
<td>grains</td>
<td></td>
<td>grains</td>
<td></td>
</tr>
</tbody>
</table>


WATER

Trinity Aquifer

The primary water source for Lorena is the Trinity Aquifer. The Trinity Aquifer flows from the Red River in North Texas through central Texas, to the Hill Country of South-Central Texas, extending through all or part of 55 counties. According to the drinking water standard set by the Texas Water Development Board (TWDB), the quality of the water falls within the optimum range (pH 6 - 9) for drinking water.³
North Cow Bayou

North Cow Bayou is in the southern part of the Lorena. This creek provides no major tributaries.

MINERAL RESOURCES

Though McLennan County has known deposits of limestone, oil, gas, sand, and gravel, any deposits within Lorena are too small to be economically viable at the present time.

CLIMATE

Temperature

Lorena has a subtropical climate. The summers in Lorena are usually warm with almost the entire season having daily highs over ninety degrees Fahrenheit. The winters are fairly mild with, on average, only 33 days below freezing per year. Table 3.2 illustrates the normal daily mean temperature in the Lorena area.

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>45.2</td>
<td>49.4</td>
<td>58.2</td>
<td>67.1</td>
<td>74.3</td>
<td>81.5</td>
<td>85.6</td>
<td>85.6</td>
<td>78.6</td>
<td>68.5</td>
<td>57.7</td>
<td>48.3</td>
</tr>
</tbody>
</table>

Source: National Climatic Data Center, Waco Weather Observation Station, 1997

Precipitation

Precipitation is fairly light in Lorena. Spring and fall have more precipitation than the summer and winter months though.

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.65</td>
<td>2.09</td>
<td>2.33</td>
<td>3.19</td>
<td>4.58</td>
<td>3.28</td>
<td>1.99</td>
<td>1.68</td>
<td>3.52</td>
<td>3.36</td>
<td>2.43</td>
<td>1.86</td>
</tr>
</tbody>
</table>

Source: National Climatic Data Center, Waco Weather Observation Station, 1997
Wind

Wind speed is fairly constant all year with only a slight peak during the spring. Table 3.4 shows the average wind speed per month. Information about wind direction is not available. There are not any issues related to wind that present a problem for development in or around Lorena.

Table 3.4 Average Wind Speed (MPH)

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.4</td>
<td>11.7</td>
<td>12.8</td>
<td>12.6</td>
<td>11.5</td>
<td>11.1</td>
<td>10.7</td>
<td>9.8</td>
<td>9.6</td>
<td>10.0</td>
<td>10.9</td>
<td>10.9</td>
</tr>
</tbody>
</table>

Source: National Climatic Data Center, Waco Weather Observation Station, 1997

Relative Humidity

Relative Humidity is also fairly constant all year with the mornings being in the 80s. The afternoon humidity is slightly more variable with a low of 48% and a high of 65%. Table 3.5 details the average relative humidity in the morning and afternoon by month.

Table 3.5 Relative Average Humidity (%)

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM</td>
<td>83</td>
<td>83</td>
<td>82</td>
<td>84</td>
<td>88</td>
<td>86</td>
<td>82</td>
<td>80</td>
<td>85</td>
<td>84</td>
<td>83</td>
</tr>
<tr>
<td>PM</td>
<td>65</td>
<td>62</td>
<td>60</td>
<td>60</td>
<td>63</td>
<td>57</td>
<td>50</td>
<td>48</td>
<td>56</td>
<td>57</td>
<td>61</td>
</tr>
</tbody>
</table>

Source: National Climatic Data Center, Waco Weather Observation Station, 1997

Pollen

Information about pollen records is unavailable, as a local monitoring network has not been fully developed yet.

AIR QUALITY

The City of Lorena is small and is unlikely to pose a threat to the air quality of the area. According to National Ambient Air Quality Standards (NAAQS), The City of Lorena is
classified as an attainment area for lead (Pb), sulfur dioxide (SO$_2$), nitrogen dioxide (NO$_2$), carbon dioxide (CO$_2$), respirable particulate matter, and ground level ozone, which is harmful ozone. In addition, the map of Texas Emissions Distribution of all criteria pollutants provided by the Environmental Protection Agency (EPA) office of Air Quality Planning and Standards classifies McLennan County as a good air quality area. In sum, although I-35 bisects Lorena, the current air quality of Lorena is good. Future traffic volume along I-35 should be monitored for its impact on the air quality of Lorena.
WILDLIFE AND VEGETATION

Vegetation

The City of Lorena lies in the Blackland Prairie ecological region. The summary of this region and its common species are listed on Table 3.6.

<table>
<thead>
<tr>
<th>Region</th>
<th>Description</th>
<th>Fauna</th>
<th>Flora</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackland Prairie</td>
<td>Gently rolling terrain with tall grasses.</td>
<td>Plains pocket gopher</td>
<td>Pecan</td>
</tr>
<tr>
<td></td>
<td>However, recently tall grass prairie plant community has become rare in this region.</td>
<td>Beaver</td>
<td>Black hickory</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raccoon</td>
<td>Black walnut</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Porcupine</td>
<td>Sycamore</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Texas Kangaroo rat</td>
<td>Burr oak</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hispid cotton rat</td>
<td>Eastern cottonwood</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ornate box turtle</td>
<td>Post oak</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green winged teal</td>
<td>Persimmon</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bobwhite quail</td>
<td>Wax myrtle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red shouldered hawk</td>
<td>Buckeye</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scissortail flycatcher</td>
<td>Mexican plum</td>
</tr>
<tr>
<td></td>
<td></td>
<td>White tailed deer</td>
<td>Sugarberry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brazilian freetail bat</td>
<td>Green ash</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ringtail</td>
<td>Flameleaf sumac</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nine banded armadillo</td>
<td>Green hawthorne</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Texas horned lizard</td>
<td>Black cherry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eastern hognose snake</td>
<td>American elderberry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tarantula</td>
<td>Bald cypress</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Golden cheeked warbler</td>
<td>Buttonbush</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Black capped vireo</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Northern mocking bird</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Guadalupe bass</td>
<td></td>
</tr>
</tbody>
</table>

Threatened and Endangered Species

Most of the 254 counties in Texas are home to threatened and endangered plants and animals. McLennan County is one of the counties with a wildlife population that contains some threatened or endangered species. Those species are listed on Table 3.7.

Table 3.7
McLennan County Threatened and Endangered Species

<table>
<thead>
<tr>
<th>BIRDS</th>
<th>FEDERAL STATUS</th>
<th>STATE STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arctic Peregrine Falcon (Falco peregrinus tundrius)</td>
<td>Delisted</td>
<td>Threatened</td>
</tr>
<tr>
<td>Bald Eagle (Haliaeetus leucocephalus)</td>
<td>Threatened</td>
<td>Threatened</td>
</tr>
<tr>
<td>Henslow's Sparrow (Ammodytes henslowii)</td>
<td>Endangered</td>
<td>Endangered</td>
</tr>
<tr>
<td>Interior Least Tern (Sterna antillarum athalassos)</td>
<td>Endangered</td>
<td>Endangered</td>
</tr>
<tr>
<td>Migrant Loggerhead Shrike (Lanius ludovicianus migrans)</td>
<td>Endangered</td>
<td>Endangered</td>
</tr>
<tr>
<td>Western Burrowing Owl (Athene cunicularia hypugaea)</td>
<td>Endangered</td>
<td>Endangered</td>
</tr>
<tr>
<td>White-faced Ibis (Plegadis chihi)</td>
<td>Endangered</td>
<td>Threatened</td>
</tr>
<tr>
<td>Whooping Crane (Grus americana)</td>
<td>Endangered</td>
<td>Endangered</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FISHES</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Guadalupe Bass (Micropterus brevulus)</td>
<td>Endangered</td>
<td>Endangered</td>
</tr>
<tr>
<td>Smalleye shiner (Notrops buccula)</td>
<td>Endangered</td>
<td>Endangered</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MAMMALS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cave Myotis Bat (Myotis velifer)</td>
<td>Endangered</td>
<td>Endangered</td>
</tr>
<tr>
<td>Plains Spotted Skunk (Spilogale putorius interrupts)</td>
<td>Endangered</td>
<td>Endangered</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REPTILES</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas Garter Snake (Thamnophis sirtalis annectens)</td>
<td>Endangered</td>
<td>Endangered</td>
</tr>
<tr>
<td>Texas Horned Lizard (Phrynosoma cornutum)</td>
<td>Endangered</td>
<td>Threatened</td>
</tr>
<tr>
<td>Timber / Canebrake Rattlesnake (Crotalus horridus)</td>
<td>Endangered</td>
<td>Threatened</td>
</tr>
</tbody>
</table>

Source: Texas Parks and Wildlife Department Annotated County Lists of Rare Species, 1999.
HAZARDS

Most cities are vulnerable to some hazards and Lorena is no exception. The main hazards that Lorena is exposed to are summarized in Table 3.8.

Table 3.8 Hazards

<table>
<thead>
<tr>
<th>Agent</th>
<th>Probability</th>
<th>Potential Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>HazMat</td>
<td>Moderate - High</td>
<td>Health Concerns, Contaminations</td>
</tr>
<tr>
<td>Flooding</td>
<td>Moderate</td>
<td>Loss of Lifelines, Agricultural Losses</td>
</tr>
<tr>
<td>Earthquake</td>
<td>Low</td>
<td>Structural and Lifeline Failures</td>
</tr>
<tr>
<td>Storm</td>
<td>Moderate - High</td>
<td>Structural and Lifeline Damage</td>
</tr>
<tr>
<td>Tornado</td>
<td>Low - Moderate</td>
<td>Structural and Lifeline Failures</td>
</tr>
<tr>
<td>Drought</td>
<td>Moderate</td>
<td>Loss of Agricultural Productivity, Water Shortages</td>
</tr>
<tr>
<td>Wildfire</td>
<td>Low</td>
<td>Loss of Agricultural Productivity</td>
</tr>
</tbody>
</table>

Source: Texas Target Cities Team, 2000

HazMat

A hazardous materials release is a possibility in Lorena because I-35 and the Union Pacific Railroad (UP) are both used for the transporting of hazardous materials. As neither is under City control, there is little that the City can do to control the movement of hazardous materials through the community; however, Lorena can ensure that it is prepared and take measures to limit what is affected by an accident.

Flooding

Lorena is located in the Cow Bayou and Bull Hide Creek drainage basins. The City’s primary flooding hazard comes from two tributaries of the North Cow Bayou. Over 850 acres of the City are located in the North Cow Bayou floodplain. Some of this land is being used for agricultural uses or is open space; however, some of the floodplain has been developed, which increases Lorena’s vulnerability and could possibly worsen the effects of a flood. Map A-3 shows the area of the city within the 100-year floodplain. The most effective way to prevent damages caused by flooding is to prohibit permanent construction or facilities in the areas vulnerable to flooding.
Earthquake
Though there are fault lines in the area making earthquakes a potential hazard for Lorena, the risk is slight. The Texas Division of Emergency Management does not consider McLennan County to have an earthquake hazard; however, the county is adjacent to the Northeast Texas region, which is considered to have an earthquake hazard.

Storms
According to the National Climatic Data Center’s Storm Database, Lorena has experienced 13 significant hail events and 5 thunderstorms with high wind events since 1993. However, due to the criteria used by the database, the actual number of events is probably higher. The county has also experienced several snow and ice storms in recent years.

Tornado
McLennan County has had several tornadoes in its history. Since 1952 over 40 have been spotted in the county. In 1997, one occurred only six miles from Lorena that caused approximately $75,000 in property damage.  

Drought
Lorena is presently experiencing the effects of drought. The Texas Water Development Board’s (TWDB) North Central Climatic Division, which includes Lorena, is considered to be a moderate drought area. Lorena itself is under a drought watch. This means that a water shortage is possible. There is also mild rationing in place. As a result, water usage for non-essential outdoor activities such as car washing may be restricted. Data has shown that Texas can be affected by the current drought much more severely than the ones experienced in recent years or even the droughts of the 1950s often referred to as the “Dust Bowl” era. The state as a whole is facing increasing vulnerability to drought because there are very few remaining sources of water that have not already been tapped and development continues at a steady pace. Constructing dams is not a popular activity anymore nor are there many optimum sites remaining. Extracting more water from aquifers is not a viable option either as most aquifers are over taxed at present.  

City of Lorena, Texas

State of the City - 2000
Wildfire

Lorena has a slight wildfire risk due to the grasslands within and surrounding the community. The National Climatic Data Center’s Storm Database has not recorded any wildfires within McLennan County since 1993 which is as far back as the database goes on this hazard. The risk is heightened during drought times.

A comprehensive hazard and vulnerability analysis should be conducted to ensure all potential hazards as well as all vulnerable facilities and populations within Lorena are identified. This will allow mitigation actions, such as restricting development in floodplains or relocating utility lines to be underground, to be planned for.

---

2. US Department of Agriculture. Soil survey of McLennan County, May 1958
INTRODUCTION

Cities are made up of people, and Demography is the study of the statistical characteristics of human populations in terms of size, density, and growth. Current demographic information is vital in order to determine future population growth rates accurately. These growth rate projections will, in turn, provide a basis for determining the City’s need for infrastructure, housing, open space, and other urban necessities. Lorena’s data is compared to that of two other cities in the area, Waco and Hewitt, and with state and county-level numbers.

HISTORICAL POPULATION

Over the past fifty years Lorena’s rate of growth has tended to be higher than that of both McLennan County and the State of Texas. Table 4.1 shows Lorena’s population growth as it compares to that of the state and the county. Lorena’s growth has risen sharply since the 1950s and it outpaces the growth of McLennan County and the State of Texas.

<table>
<thead>
<tr>
<th>Year</th>
<th>Lorena</th>
<th>Rate of Change</th>
<th>McLennan County</th>
<th>Rate of Change</th>
<th>State of Texas</th>
<th>Rate of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>400</td>
<td></td>
<td>130,144</td>
<td></td>
<td>7,711,194</td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>436</td>
<td>9%</td>
<td>147,553</td>
<td>13%</td>
<td>11,198,655</td>
<td>45%</td>
</tr>
<tr>
<td>1990</td>
<td>1158</td>
<td>166%</td>
<td>189,123</td>
<td>28%</td>
<td>16,986,510</td>
<td>52%</td>
</tr>
<tr>
<td>1999</td>
<td>1674</td>
<td>45%</td>
<td>204,584</td>
<td>8%</td>
<td>20,044,141</td>
<td>18%</td>
</tr>
</tbody>
</table>

Source: City and County Data Book, 1952 and 1978, Texas State Data Center, and Handbook of McLennan County and Waco, Texas
AGE DISTRIBUTION

The inhabitants of the City of Lorena have an age distribution that is similar to that of the surrounding cities and McLennan County. Lorena, like many of its neighbors, is a relatively young community with the median age of the citizens being 30.9 years. Approximately 36.2% of the population is under 20 years of age. This represents the largest age group. Table 4.2 shows the age distribution of the populations of Lorena, Hewitt, Waco and McLennan County by cohorts.

Table 4.2 Age Distribution for Lorena, Hewitt, Waco, and McLennan County, 1990

<table>
<thead>
<tr>
<th>Age</th>
<th>Lorena</th>
<th></th>
<th>Hewitt</th>
<th></th>
<th>Waco</th>
<th></th>
<th>McLennan County</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent of Total</td>
<td>Number</td>
<td>Percent of Total</td>
<td>Number</td>
<td>Percent of Total</td>
<td>Number</td>
<td>Percent of Total</td>
</tr>
<tr>
<td>0-4</td>
<td>116</td>
<td>10.0</td>
<td>818</td>
<td>9.1</td>
<td>7,903</td>
<td>7.6</td>
<td>13,964</td>
<td>7.4</td>
</tr>
<tr>
<td>5-9</td>
<td>105</td>
<td>9.1</td>
<td>852</td>
<td>9.5</td>
<td>7,026</td>
<td>6.8</td>
<td>14,271</td>
<td>7.5</td>
</tr>
<tr>
<td>10-13</td>
<td>67</td>
<td>5.8</td>
<td>590</td>
<td>6.6</td>
<td>5,211</td>
<td>5.0</td>
<td>10,628</td>
<td>5.6</td>
</tr>
<tr>
<td>14-17</td>
<td>103</td>
<td>8.9</td>
<td>561</td>
<td>6.2</td>
<td>5,128</td>
<td>4.9</td>
<td>10,498</td>
<td>5.6</td>
</tr>
<tr>
<td>18-24</td>
<td>73</td>
<td>6.3</td>
<td>806</td>
<td>9.0</td>
<td>19,488</td>
<td>18.8</td>
<td>26,965</td>
<td>14.3</td>
</tr>
<tr>
<td>25-34</td>
<td>207</td>
<td>17.9</td>
<td>1,786</td>
<td>19.9</td>
<td>16,293</td>
<td>15.7</td>
<td>29,460</td>
<td>15.6</td>
</tr>
<tr>
<td>35-44</td>
<td>154</td>
<td>13.3</td>
<td>1,998</td>
<td>22.2</td>
<td>11,365</td>
<td>11.0</td>
<td>24,602</td>
<td>13.0</td>
</tr>
<tr>
<td>45-54</td>
<td>137</td>
<td>11.8</td>
<td>810</td>
<td>9.0</td>
<td>7,631</td>
<td>7.4</td>
<td>17,489</td>
<td>9.2</td>
</tr>
<tr>
<td>55-59</td>
<td>55</td>
<td>4.7</td>
<td>187</td>
<td>2.1</td>
<td>3,864</td>
<td>3.7</td>
<td>7,727</td>
<td>4.1</td>
</tr>
<tr>
<td>60-64</td>
<td>22</td>
<td>1.9</td>
<td>199</td>
<td>2.2</td>
<td>4,365</td>
<td>4.2</td>
<td>8,133</td>
<td>4.3</td>
</tr>
<tr>
<td>65-74</td>
<td>73</td>
<td>6.3</td>
<td>268</td>
<td>3.0</td>
<td>8,181</td>
<td>7.9</td>
<td>14,186</td>
<td>7.5</td>
</tr>
<tr>
<td>75-84</td>
<td>41</td>
<td>3.5</td>
<td>78</td>
<td>.9</td>
<td>5,426</td>
<td>5.2</td>
<td>8,544</td>
<td>4.5</td>
</tr>
<tr>
<td>85 and over</td>
<td>5</td>
<td>.4</td>
<td>30</td>
<td>.3</td>
<td>1,709</td>
<td>1.6</td>
<td>2,656</td>
<td>1.4</td>
</tr>
<tr>
<td>Total</td>
<td>1,158</td>
<td>100%</td>
<td>8,983</td>
<td>100%</td>
<td>103,590</td>
<td>100%</td>
<td>189,123</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Source: Office of Social and Economic Data Analysis, University of Missouri Outreach Extension, 1990 U.S. Census*
GENDER

Lorena's total population is relatively evenly distributed between men and women. Table 4.3 shows that, in terms of percentages, this gender mix is almost identical to that of the county and very similar to that of the state.

Table 4.3 Gender Distribution for Lorena, McLennan County, and Texas, 1990

<table>
<thead>
<tr>
<th>Gender</th>
<th>Lorena</th>
<th>McLennan County</th>
<th>Texas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent of Total</td>
<td>Number</td>
</tr>
<tr>
<td>Male</td>
<td>559</td>
<td>48.3</td>
<td>91,808</td>
</tr>
<tr>
<td>Female</td>
<td>599</td>
<td>51.7</td>
<td>97,315</td>
</tr>
<tr>
<td>Total</td>
<td>1,158</td>
<td>100.0%</td>
<td>189,123</td>
</tr>
</tbody>
</table>

Source: United States Census Bureau American FactFinder, 1990

HOUSEHOLD SIZE AND TYPE

Household Size

More of Lorena's residents live in households composed of four persons than any other household size. Table 4.4 shows that 400 residents live in households of this size. Two and three person households are the second most common household size with 222 and 237 people living in each, respectively.

Lorena is in line with trends in household size for McLennan County and Texas. The only exceptions (shown in Table 4.5) are that the city has a lower percentage of one person households and higher percentages of two and four person households. This is not surprising since a great number of Lorena's residents, as seen in Table 4.2, are of child-bearing age. The U.S. Census reports that, in 1990, Lorena had an average of 2.94 persons per household. This number is higher than numbers for surrounding communities, McLennan County, and the State of Texas. Texas, McLennan County, and Waco have an average of 2.73, 2.59, and 2.45 persons per household, respectively.
Household Type

According to the 1990 U.S. Census, 84.2% of Lorena’s occupied housing stock consists of family households. Family households are dwelling units containing two or more family members related by blood or marriage. McLennan County and Texas have 68.2% and 71.6% family households respectively. Lorena’s housing stock, therefore, tends to be more oriented toward family households (as opposed to groups of unrelated people living together) than the county or the state.

Table 4.4 Number of People in Households by Size in Lorena, McLennan County, and Texas, 1990

<table>
<thead>
<tr>
<th>Household Size</th>
<th>Lorena</th>
<th>McLennan County</th>
<th>Texas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 person</td>
<td>61</td>
<td>18,095</td>
<td>1,452,936</td>
</tr>
<tr>
<td>2 Persons</td>
<td>222</td>
<td>44,882</td>
<td>3,654,748</td>
</tr>
<tr>
<td>3 Persons</td>
<td>237</td>
<td>36,159</td>
<td>3,158,262</td>
</tr>
<tr>
<td>4 Persons</td>
<td>400</td>
<td>41,948</td>
<td>3,807,712</td>
</tr>
<tr>
<td>5 Persons</td>
<td>140</td>
<td>22,175</td>
<td>2,282,715</td>
</tr>
<tr>
<td>6 Persons</td>
<td>66</td>
<td>9,396</td>
<td>1,115,244</td>
</tr>
<tr>
<td>7 or more Persons</td>
<td>28</td>
<td>7,917</td>
<td>1,004,696</td>
</tr>
</tbody>
</table>

Source: United States Census Bureau American FactFinder, 1990

Table 4.5 Percentage of Total Population in Households by Size In Lorena, McLennan County, and Texas, 1990

<table>
<thead>
<tr>
<th>Household Size</th>
<th>Lorena</th>
<th>McLennan County</th>
<th>Texas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 person</td>
<td>5.2</td>
<td>9.9</td>
<td>8.6</td>
</tr>
<tr>
<td>2 Persons</td>
<td>19.2</td>
<td>24.8</td>
<td>21.5</td>
</tr>
<tr>
<td>3 Persons</td>
<td>20.6</td>
<td>19.2</td>
<td>18.6</td>
</tr>
<tr>
<td>4 Persons</td>
<td>34.7</td>
<td>23.3</td>
<td>23.4</td>
</tr>
<tr>
<td>5 Persons</td>
<td>12.3</td>
<td>12.8</td>
<td>14.4</td>
</tr>
<tr>
<td>6 Persons</td>
<td>5.7</td>
<td>5.6</td>
<td>7.6</td>
</tr>
<tr>
<td>7 or more Persons</td>
<td>2.3</td>
<td>4.4</td>
<td>6.9</td>
</tr>
</tbody>
</table>

Source: United States Census Bureau American FactFinder, 1990
Racial Composition

The racial composition of Lorena is relatively homogeneous compared to that of surrounding areas and McLennan County as a whole. Of the 1,158 residents of Lorena, approximately 94.6% are white. Table 4.6 provides a comparative breakdown of the racial composition of the cities of Lorena, Hewitt, Waco, and McLennan County.

Table 4.6 Racial Composition of Lorena, Hewitt, Waco and McLennan County, 1990

<table>
<thead>
<tr>
<th>Race</th>
<th>Lorena</th>
<th>Hewitt</th>
<th>Waco</th>
<th>McLennan County</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent of Total</td>
<td>Number</td>
<td>Percent of Total</td>
</tr>
<tr>
<td>White</td>
<td>1,095</td>
<td>94.6%</td>
<td>8,186</td>
<td>91.0%</td>
</tr>
<tr>
<td>Black</td>
<td>4</td>
<td>0.4%</td>
<td>500</td>
<td>5.5%</td>
</tr>
<tr>
<td>American Indian, Eskimo, or Aleut</td>
<td>7</td>
<td>0.6%</td>
<td>25</td>
<td>0.3%</td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td>5</td>
<td>0.4%</td>
<td>111</td>
<td>1.2%</td>
</tr>
<tr>
<td>Other Race</td>
<td>47</td>
<td>4%</td>
<td>161</td>
<td>2.0%</td>
</tr>
<tr>
<td>Total</td>
<td>1158</td>
<td>100%</td>
<td>8,983</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: United States Census Bureau American FactFinder, 1990

Educational Attainment

As compared to McLennan County and the State of Texas, Lorena has a higher percentage of persons with a moderate level of education. Table 4.7 shows that, of persons twenty five years of age and older, there is a higher percentage of high school graduates, those with some college, and holders of Associates Degrees in Lorena than in the comparison areas. A total of 69.3% of Lorena’s population falls into this moderate level of education category. Lorena also has a higher percentage of persons with bachelor’s degrees (11.7%) than McLennan County (10.8%) but less than Texas (13.9%).
It is also encouraging to see that there is a smaller percentage of lower educational attainment (less than 9th grade or no diploma) than in the other areas studied.

Table 4.7 Education Attainment as a Percentage of the Population 25 and Older in Lorena, McLennan County and Texas, 1990

<table>
<thead>
<tr>
<th>Educational Attainment</th>
<th>Lorena</th>
<th>McLennan Co</th>
<th>Texas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 9th grade</td>
<td>5.2</td>
<td>11.6</td>
<td>13.5</td>
</tr>
<tr>
<td>9th to 12th grade, no diploma</td>
<td>10.4</td>
<td>16.9</td>
<td>14.4</td>
</tr>
<tr>
<td>High school graduate</td>
<td>34.9</td>
<td>27.8</td>
<td>25.6</td>
</tr>
<tr>
<td>Some college, no degree</td>
<td>27.2</td>
<td>20.5</td>
<td>21.1</td>
</tr>
<tr>
<td>Associate degree</td>
<td>7.2</td>
<td>6.7</td>
<td>5.2</td>
</tr>
<tr>
<td>Bachelor's degree</td>
<td>11.7</td>
<td>10.8</td>
<td>13.9</td>
</tr>
<tr>
<td>Graduate or professional degree</td>
<td>3.5</td>
<td>5.8</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Source: United States Census Bureau American FactFinder, 1990

CONCLUSION

Lorena is a rapidly growing, relatively young community composed mostly of smaller family households. The city is racially homogenous and fairly well educated. These characteristics are typical of a "bedroom community." This type of community usually serves as a home for people who work in a larger, nearby city, such as Waco. Planning efforts, then, will need to be focused to fit the needs and assets of a growing bedroom community.

1 Webster's Third International Dictionary, s.v. "Demography."
SECTION 5

Local Economy
Section 5

Local Economy

INTRODUCTION

Economic viability is a key factor in determining Lorena’s quality of life. Lorena lies on the Interstate 35 Corridor between the Dallas/Fort Worth Metropolitan Statistical Area (MSA) and the Austin MSA and is in a prime area for economic activity. To plan for a future economic activity, it is important to evaluate and analyze the current economy, particularly as it relates to county and statewide economic activity. Through this evaluation process, a city can develop goals and strategies for achieving its desired future economic state. This section reviews several key factors in understanding the economic activity of Lorena including the impact of outside economic forces on Lorena's economy, as well as Lorena’s labor force characteristics, employment statistics, real estate trends, the City's financial status and the role of the Economic Development Council. It also compares some of these economic characteristics to those of McLennan County and Texas. Also included are comparisons of Lorena's economy to McLennan County and the State of Texas.
OUTSIDE ECONOMIC FORCES

Because of Lorena's small size and proximity to Waco and I-35, outside forces play a major role in the local economy. I-35 offers easy access to larger cities such as Temple, and most importantly, nearby Waco. Many of Lorena's citizens commute to Waco for work. Figure 5.1 illustrates this fact by showing that the majority of Lorena citizens drive between twenty and twenty-four minutes to work.

Figure 5.1
Time Traveled to Work

<table>
<thead>
<tr>
<th>Minutes Traveled</th>
<th>Number of Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 or more</td>
<td>49</td>
</tr>
<tr>
<td>30 to 34</td>
<td>53</td>
</tr>
<tr>
<td>25 to 29</td>
<td>49</td>
</tr>
<tr>
<td>20 to 24</td>
<td>171</td>
</tr>
<tr>
<td>15 to 19</td>
<td>88</td>
</tr>
<tr>
<td>10 to 14</td>
<td>43</td>
</tr>
<tr>
<td>5 to 9</td>
<td>56</td>
</tr>
<tr>
<td>Less than 5</td>
<td>28</td>
</tr>
</tbody>
</table>

MAJOR EMPLOYERS OF WACO

It is important to identify the major employers of Waco for two reasons. First, because the majority of the citizens of Lorena commute to Waco for employment and secondly because these employers are potential synergies for economic development in Lorena.

Figure 5.2
Major Employers of Waco

<table>
<thead>
<tr>
<th>Employer</th>
<th>Industry / Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caterpillar</td>
<td>Heavy equipment builder with 100,000 square foot manufacturing facility for articulated trucks in Waco.</td>
</tr>
<tr>
<td>M&amp;M Mars</td>
<td>Candy maker and distributor with 600,000 square foot production facility in Waco</td>
</tr>
<tr>
<td>Raytheon</td>
<td>Electronics and Aviation Technology company with large Aircraft Integration facility in Waco</td>
</tr>
<tr>
<td>Trane</td>
<td>Air conditioning system corporation with manufacturing facility in Waco that was recently expanded by 100,000 square feet</td>
</tr>
</tbody>
</table>

Source: City of Waco Economic Development Department, 2000

In addition to Lorena's dependence on Waco as an employment center, I-35 offers current and potential external economic forces. As a major north-south artery extending from Duluth, Minnesota, at its northern boundary to the Mexican border at Laredo, Texas, I-35 runs through many major American cities. As a result of the access and exposure offered by I-35, the majority of Lorena's businesses are located along the frontage roads. Only a few businesses in the downtown area face Center Street. As the North American Free Trade Agreement (NAFTA) continues to strengthen trade ties between the United States, Mexico and Canada, the strategic location of Lorena and its larger neighbors, Temple and Waco, along this important trade route may bring more industry and commerce to the area. This potential expansion would bring more jobs and ultimately result in physical and economic growth for Lorena.
**LABOR FORCE PLACE OF WORK**

Lorena's economy depends largely on external forces and the regional economy. Due to Lorena's size and lack of employment opportunities, the majority of Lorena residents commute to outside communities for employment.

**Figure 5.3**
Lorena Residents' Place of Employment, 1990

![Bar chart showing place of employment in Lorena, 1990](source)


According to the survey conducted by the Lorena Master Plan Committee in April 1999, approximately eighty-seven percent (86.7%) of Lorena residents who answered the survey are interested in attracting more employment opportunities. The immediate impediment to this goal is a lack of incentives and available space for new businesses.
LABOR FORCE BY GENDER

Figure 5.4 shows the percentage of people in the labor force by gender for Lorena, McLennan County, Texas, and the United States according to the 1990 U.S. Census.

The U.S. Census defines labor force as all people between the ages of sixteen and sixty-five who are either working or actively looking for work. Disenfranchised workers, students, and citizens outside of the age bracket are not considered to be members of the labor force.

The number of employed males and females in all survey areas are very similar. There are slightly more employed females in Lorena (46%) on average than in Texas (44%) as a whole. This may be a result of the family household make-up in Lorena. There are 329 family households, 282 married-couple family households, thirty-nine (39) female headed households, and eight (8) male headed households. Because there are more female headed households than male headed households, more single mothers are having to support the family by working. Compared to McLennan County and Texas, Lorena has a higher percentage of married-couple family households and a lower percentage of single parent households.

The opposite is true of the working males in Lorena. 54% of males in Lorena are working versus 56% for the State of Texas as a whole. These figures may be a result of the age distribution of Lorena. According to the 1990 U.S. Census, approximately twelve percent (11.8%) of the population was in the 45-54 age group. In the ten years that have passed, these people have moved into the 55-64 age group.

**MEDIAN HOUSEHOLD INCOME & PER CAPITA INCOME**

Figure 5.5 shows the per capita income and the median household income for residents of Lorena. These estimates are based on data from the 1990 U.S. Census, which is based on income in 1989. Lorena’s median household income is $31,827, which is higher than that of McLennan County at $22,665 and Texas at $27,016.

**Figure 5.5**

<table>
<thead>
<tr>
<th>Median Household Income &amp; Per Capita Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas</td>
</tr>
<tr>
<td>McLennan County</td>
</tr>
<tr>
<td>Lorena</td>
</tr>
</tbody>
</table>

$0 | $5,000 | $10,000 | $15,000 | $20,000 | $25,000 | $30,000 | $35,000 |


Lorena’s per capita income of $11,443 is slightly lower than that of Texas at $12,904, but is slightly higher than that of McLennan County at $11,185. This relatively average per capita income is in direct contrast to Lorena’s well above average household income. This means that household size in Lorena is larger than average for the State. Two factors contribute to this. The majority of housing in Lorena is comprised of single family homes. In addition, the Lorena Independent School District has a good reputation in the Waco...
area and is a major draw for families with school age children. Both of these factors work together to create a community with larger household sizes and therefore lower per capita household incomes.

**EMPLOYMENT BY SECTOR**

Figure 5.6 shows employment by sector, the percentage of workers in the private wage and salary sector, the self-employed sector and the government sector.

<table>
<thead>
<tr>
<th></th>
<th>Lorena</th>
<th>McLennan County</th>
<th>Texas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private-wage/salary</td>
<td>75.6%</td>
<td>78.8%</td>
<td>77.1%</td>
</tr>
<tr>
<td>Self-employed</td>
<td>7.5%</td>
<td>7.1%</td>
<td>7.6%</td>
</tr>
<tr>
<td>Government</td>
<td>16.9%</td>
<td>14.1%</td>
<td>15.2%</td>
</tr>
</tbody>
</table>


Lorena has slightly fewer workers in the private wage and salary sector than that of the state and county, but has more workers in the government sector than that of the state and county. This may be a result of the City’s close proximity to government entities such as the City of Waco, the Regional Veteran Administrative Center, the Veteran Hospitals of Waco, Marlin, and Temple as well as Ft. Hood and the Army Reserve Center.⁵
EMPLOYMENT BY INDUSTRY

Figure 5.7 shows employment by industry for Lorena, McLennan County, and Texas as of 1990. The patterns were generally alike in the three survey areas. Since the majority of Lorena’s residents work in Waco and other surrounding areas, it is not a surprise that Lorena follows the trends of its surrounding areas.

Figure 5.7
Employment By Industry, 1990

<table>
<thead>
<tr>
<th></th>
<th>Lorena</th>
<th>McLennan County</th>
<th>Texas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed persons 16 years and over</td>
<td>550 (100%)</td>
<td>82,485 (100%)</td>
<td>7,634,279 (100%)</td>
</tr>
<tr>
<td>Agriculture, forestry, and fisheries</td>
<td>12 (2.2%)</td>
<td>1,913 (2.3%)</td>
<td>212,402 (2.8%)</td>
</tr>
<tr>
<td>Mining</td>
<td>2 (.7%)</td>
<td>142 (2%)</td>
<td>164,571 (2.2%)</td>
</tr>
<tr>
<td>Construction</td>
<td>27 (4.9%)</td>
<td>4,588 (5.6%)</td>
<td>514,102 (6.7%)</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>93 (16.9%)</td>
<td>14,436 (17.5%)</td>
<td>1,101,938 (14.4%)</td>
</tr>
<tr>
<td>Transportation, communications, and other public utilities</td>
<td>68 (12.4%)</td>
<td>5,375 (6.5%)</td>
<td>580,315 (7.6%)</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>26 (4.7%)</td>
<td>3,533 (4.3%)</td>
<td>375,869 (4.9%)</td>
</tr>
<tr>
<td>Retail trade</td>
<td>94 (17.1%)</td>
<td>14,684 (17.1%)</td>
<td>1,331,344 (17.4%)</td>
</tr>
<tr>
<td>Finance, insurance, and real estate</td>
<td>39 (7.1%)</td>
<td>5,317 (6.4%)</td>
<td>521,461 (6.8%)</td>
</tr>
<tr>
<td>Services</td>
<td>158 (28.7%)</td>
<td>29,386 (35.6%)</td>
<td>2,487,418 (32.6%)</td>
</tr>
<tr>
<td>Public Administration</td>
<td>31 (5.6%)</td>
<td>3,111 (3.8%)</td>
<td>344,859 (4.5%)</td>
</tr>
</tbody>
</table>

### Major Employers of Lorena

**Figure 5.8**  
Major Employers of Lorena

<table>
<thead>
<tr>
<th>Employer</th>
<th>Type of Business</th>
<th>Number of Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lorena ISD</td>
<td>School District</td>
<td>162 full-time, 193 total</td>
</tr>
<tr>
<td>Quality Core</td>
<td>Buy and Sell Used</td>
<td>125</td>
</tr>
<tr>
<td></td>
<td>Auto-parts</td>
<td></td>
</tr>
<tr>
<td>Scott Williams Dry Wall</td>
<td>Installs Dry Walls</td>
<td>50</td>
</tr>
<tr>
<td>Ironhorse Iron Works</td>
<td>Structural Steel Fabricator</td>
<td>40</td>
</tr>
<tr>
<td>Mitchell Construction</td>
<td>Construction</td>
<td>N/A</td>
</tr>
<tr>
<td>Brookshire Brothers</td>
<td>Grocery</td>
<td>18</td>
</tr>
<tr>
<td>Extraco Corporation</td>
<td>Bank</td>
<td>15</td>
</tr>
<tr>
<td>City of Lorena</td>
<td>City</td>
<td>12</td>
</tr>
<tr>
<td>Mid-Tex Truck Repair</td>
<td>18 Wheeler Repair</td>
<td>7</td>
</tr>
<tr>
<td>Texas Greyhound Association</td>
<td>State Headquarters</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Training Facility</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Breed Registration</td>
<td></td>
</tr>
</tbody>
</table>


*Representative from each entity, interview by the author, Fall 2000, Lorena, TX. Phone interview.*
UNEMPLOYMENT

Lorena's unemployment rate of 2.6% is much lower than that of McLennan County's 6.5% and the State of Texas' 7.0%. Figure 5.9 illustrates this gap.

Figure 5.9
Unemployment


Lorena's low unemployment rate may be due to Lorena residents' high level of educational attainment coupled with the job opportunities provided by the proximity to Waco. It also indicates that the lack of employment opportunities could be forcing younger residents to relocate to find employment.
LORENA REAL ESTATE MARKET

Most of the recent growth in the real estate market in the Lorena area has been single-family homes developed on one-half acre to one-acre lots. These homes are uniformly brick one-story structures ranging from 1,800 square feet to 3,000 square feet. This development has occurred in three areas around Lorena:

- The Quarry Subdivision to the east on FM 2837
- Country Springs northwest of Lorena
- and in scattered sites along Old Bethany Road south of the city

Of these areas, only The Quarry is within Lorena's City Limits. The other areas are either within Lorena's extra territorial jurisdiction (ETJ), or just beyond its boundaries.

Aside from single-family development, there has been little real estate activity in Lorena. There has not been any new multi-family housing activity. The only new commercial development in recent years has been the Brookshire Brothers Grocery Store in 1995 on the west side of I-35. The other shopping centers and retail properties in the city are almost fully occupied. As more homes are built in and around Lorena, the market will demand additional retail and commercial spaces.
CITY REVENUES AND EXPENDITURES

Figure 5.10 compares revenue to expenditure numbers for the City of Lorena. The revenue and expenditure figures for the 2000/2001 fiscal year are those that are currently proposed by the City of Lorena. Assuming that the City has more expenditures than revenue, the City will need to seek additional funding.

Figure 5.10
Municipal Revenues & Expenditures

Source: City of Lorena Annual Budget - Fiscal Year 2000-2001

Figure 5.11
Bonded Indebtedness

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20 year bond</td>
<td>25 year bond</td>
<td>12 year bond</td>
<td>3 year bond</td>
<td>5 year bond</td>
<td>Total</td>
</tr>
<tr>
<td>Principal</td>
<td>$585,000.00</td>
<td>$3,305,000.00</td>
<td>$620,000.00</td>
<td>$17,158.37</td>
<td>$30,886.43</td>
<td>$4,558,044.80</td>
</tr>
<tr>
<td>Interest</td>
<td>$286,597.50</td>
<td>$3,169,661.50</td>
<td>$241,925.00</td>
<td>$1,371.66</td>
<td>$5,292.48</td>
<td>$3,704,848.14</td>
</tr>
<tr>
<td>Total</td>
<td>$871,597.50</td>
<td>$6,474,661.50</td>
<td>$861,925.00</td>
<td>$18,530.03</td>
<td>$36,178.91</td>
<td>$8,262,892.94</td>
</tr>
</tbody>
</table>
ASSESSED VALUES

Figure 5.12 shows the assessed taxable value of real property in the City of Lorena. This is the tax base that the City draws from in addition to sales tax. The value of real property has risen steadily throughout the 1990s. A possible cause for this rise is the increase in residential construction and the development of large retail facilities such as the Brookshire Brothers grocery store during those years.

Figure 5.12
Assessed Value of Taxable Property in Lorena

Source: City of Lorena, 2000
TAX RATES

Lorena is dependent on the taxes collected on property within the City and from sales of goods and services within the city. Figures 5.13 and 5.14 show Lorena’s current tax income and distribution as well as the current tax rate per $100.

Figure 5.13
Estimated Ad Valorem Tax Collection & Proposed Distribution
Fiscal Year 2001

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessed Valuation for 2000</td>
<td>$40,914,095.00</td>
</tr>
<tr>
<td>Tax Rate per $100 Valuation</td>
<td>0.420848</td>
</tr>
<tr>
<td>Revenue from 2000 Tax Roll</td>
<td>172,186.15</td>
</tr>
<tr>
<td>Estimated Collections</td>
<td>100%</td>
</tr>
<tr>
<td>TOTAL FUNDS AVAILABLE</td>
<td>$172,186.15</td>
</tr>
</tbody>
</table>

Source: City of Lorena Annual Budget – Fiscal Year 2000-2001

Figure 5.14
Tax Rate Per $100

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>0.202636</td>
<td>0.247883</td>
<td>101,419.15</td>
<td>58.90%</td>
</tr>
<tr>
<td>Interest &amp; Sinking</td>
<td>0.218212</td>
<td>0.172965</td>
<td>70,767.00</td>
<td>41.10%</td>
</tr>
<tr>
<td>Total</td>
<td>0.420848</td>
<td>0.420848</td>
<td>172,186.15</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Source: City of Lorena Annual Budget – Fiscal Year 2000-2001
**SPECIAL DISTRICTS**

Table 5.15 shows that property taxes in Lorena are collected by several special districts.

<table>
<thead>
<tr>
<th>Special Districts</th>
<th>Property Tax Rate/$100 Appraised Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Lorena</td>
<td>$.420848</td>
</tr>
<tr>
<td>Farm to Market</td>
<td>$.0102</td>
</tr>
<tr>
<td>McLennan County</td>
<td>$.4464</td>
</tr>
<tr>
<td>Lorena ISD</td>
<td>$1.571</td>
</tr>
<tr>
<td>McLennan Community College</td>
<td>$.117355</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$2.565435</strong></td>
</tr>
</tbody>
</table>

*Source: City of Lorena, “2000 Tax Rates for McLennan County Special Districts.” 2000*

Lorena will soon be the site of the third substation of the McLennan County Tax Office, the other two are in West and McGregor. The new substation will be located next to the Extraco Bank on the east side of I-35. McLennan County residents will be able to register their vehicles and pay taxes here.

**LORENA ECONOMIC DEVELOPMENT COUNCIL**

The Lorena Economic Development Council (EDC) was formed in October 1996 and receives one-half of one percent (.5%) from each dollar spent (the sales tax) to promote economic opportunities. Money is only expended if it has been posted for sixty (60) days and approved through a voting process.

To date the EDC has funded or assisted with the following projects:

- Refurbish the I-35 gateway sign with the Chamber of Commerce
- Produced brochures promoting Lorena
- Sponsored two clean-up days
- Recruited Brookshire Bros. grocery store to locate in Lorena
- Funded a water line to the new Brookshire Bros. grocery store
- Worked with the County Commissioner to encourage the new County Substation be located in Lorena

SECTION

6

Land Use
Section 6 Land Use

INTRODUCTION

Land use is a key issue in the growth and quality of life of a city. Functional and attractive land use patterns greatly improve the appearance of a city as well as the quality of life for its residents. Poorly planned land use is both unattractive and a nuisance.

LAND USE AT A GLANCE

The primary tool for coordinating land use is zoning. Zoning can be defined as "the division of a jurisdiction (a city) into districts (zones) within which permissible uses are prescribed and restrictions on building height, bulk, layout, and other requirements are defined." The power to zone is given to the City of Lorena, like all Texas cities, by an enabling act by the State of Texas permitting the use of zoning ordinances. The City of Lorena Zoning Ordinance uses the following land use classifications:

- R-1 – Single Family Homes
- R-2 – Duplex District
- R-3 – Multi-Family Low Density District
- R-4 Multi-Family Low Density District
- R-P Planned Residential District
- C-Commercial
- P-C – Planned Commercial
- M – Industrial District
- M-P Planned Industrial District
Map A-5
Planning Areas

Legend

- Planning Area 1
- Planning Area 2
- Planning Area 3
- Planning Area 4

TEXAS TARGET CITIES PROGRAM
Department of Landscape Architecture & Urban Planning
College of Architecture
Texas A&M University
2000

Base Map Source:
City of Waco
Texas Target Cities Team
Lorena was divided into planning areas to allow for in-depth analysis. These areas were defined primarily by man-made boundaries such as roads or railroad tracks as well as by similar land uses or housing conditions. By separating Lorena into these smaller areas, the Team can better analyze the needs of both each individual area as well as the city as a whole. These planning areas are shown on Map A-5.

In September 2000, the Target Cities Team performed an on-site inventory of the existing land uses in Lorena. All land uses are divided into one of the following classifications:

- **Single Family** – houses where only one family or similar group of people live
- **Duplex** – a structure consisting of two attached living spaces or apartments/houses
- **Apartment** – a structure containing more than two attached living spaces, or apartments
- **Commercial** – structures used for any type of business including stores, restaurants, banks, and repair shops
- **Public/ Utility** – structures or spaces used for government or other public uses including City Hall and any areas used for public utilities creation and distribution.
- **Schools** – any education facility, public or private
- **Institutional** – these include churches, fraternal organizations, seniors’ centers and other such uses
- **Parks** – public spaces intended for recreation

This study was used to analyze patterns of growth and development in Lorena such as the location of retail centers and multi-family housing. Determining land use distribution – how much of the total land is used for a particular purpose - was another objective of the Target Cities Team study. This is represented as a percentage of the total amount of land in Lorena. The following text outlines the inventory process and findings of the Team. In addition, Map A-6 offers a graphic representation of the findings of this land use analysis.
LAND USE DISTRIBUTION IN THE YEAR 2000

After the land uses were determined, the total acreage of each category was calculated as shown on Table 6.1

<table>
<thead>
<tr>
<th>Land Use Category</th>
<th>Percentage</th>
<th>Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-family</td>
<td>11%</td>
<td>149.95</td>
</tr>
<tr>
<td>Duplex</td>
<td>0.5%</td>
<td>6.82</td>
</tr>
<tr>
<td>Apartment</td>
<td>0.02%</td>
<td>0.27</td>
</tr>
<tr>
<td>Commercial</td>
<td>2%</td>
<td>27.26</td>
</tr>
<tr>
<td>Public/City</td>
<td>0.05%</td>
<td>0.68</td>
</tr>
<tr>
<td>Schools</td>
<td>1%</td>
<td>13.63</td>
</tr>
<tr>
<td>Institutional</td>
<td>0.2%</td>
<td>2.73</td>
</tr>
<tr>
<td>Industrial</td>
<td>0.2%</td>
<td>2.73</td>
</tr>
<tr>
<td>Parks</td>
<td>0.03%</td>
<td>0.41</td>
</tr>
<tr>
<td>Open</td>
<td>80%</td>
<td>1090.56</td>
</tr>
<tr>
<td>Unidentified</td>
<td>5%</td>
<td>68.16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.00%</strong></td>
<td><strong>1363.20</strong></td>
</tr>
</tbody>
</table>
DEVELOPMENT PATTERNS

The term development patterns refers to the manner in which the city has been constructed and the patterns certain land uses have followed. Most commercial development in Lorena has been along I-35, outside of the four blocks of Center Street that make up the downtown area. Most single-family residential development has occurred in one of three places. The first is in the square grid of streets off of Center and Borden Streets that make up the older portion of Lorena. The remaining single family residential has been to the northwest of downtown in the areas around the public school complex or to the east of I-35. This development has occurred since the late 1970s. Table 6-2 and Map A-7 shows these developments.

Residential Subdivision Development
Table 6.2

<table>
<thead>
<tr>
<th>Subdivision</th>
<th>Year Developed</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Meadows</td>
<td>1978</td>
</tr>
<tr>
<td>Country Air Estates</td>
<td>1978</td>
</tr>
<tr>
<td>Ken Mary Estates</td>
<td>1981</td>
</tr>
<tr>
<td>Country Springs (ETJ)</td>
<td>1983</td>
</tr>
<tr>
<td>The Quarry</td>
<td>1990</td>
</tr>
<tr>
<td>Shoal Ridge</td>
<td>1998</td>
</tr>
</tbody>
</table>

Source: City of Lorena

The few multi-family units in Lorena are clustered around the intersection of Old Lorena Road and I-35. The majority of Lorena's industrial development has occurred in the city's northernmost portion between North Old Temple Road and I-35.
ANNEXATION PATTERNS

The primary tool that municipal governments can use to increase the size of the city is annexation. State legislation allows Cities to annex land that is within a specified distance of and is contiguous to the current city limits. The amount of land that a city may annex is directly proportional to its size. Lorena has used this tool to grow to the north and south of the city continually since the 1980s. Map A-8 illustrates these annexations.

LAND USE PROBLEM AREAS

In general, land uses in Lorena are complementary and compatible. The majority of the single-family neighborhoods have maintained their integrity. Manufactured homes are nearly non-existent and most homes and neighborhoods are well maintained. One potential problem is the single-family development happening in the flood plain. This is particularly true of the residential development in the southeastern portion of Lorena along F.M. 2837. The exception to this is the northwestern portion of the city, in which development appears to have been intentionally excluded from a large flood area. The green shaded areas on Map A-3 show the flood plains.

CONCLUSION

Lorena is a small but rapidly growing community. The Waco area continues to grow towards Lorena along Bosque Boulevard and Franklin Avenue and through Hewitt. The southern boundary of Waco's Extra Territorial Jurisdiction (ETJ), which is the maximum area Waco may legally annex, lies only one and one half miles north of Lorena's city limits. As many people choose to build new homes in Lorena and commute to Waco and the surrounding area, Lorena is threatened by the "suburban sprawl" development that has already engulfed neighboring Hewitt. The first signs of such development are apparent in the shopping centers along I-35. Careful land use analysis and planning is the key defense Lorena has to protect its "small town" character.
SECTION 7

Housing
INTRODUCTION

Housing types and conditions are a vital part of the image and appeal of any community. This section examines the current housing conditions in Lorena. This section includes the history of housing construction, housing unit and typology, owner occupied housing unit values, rental rate, and household occupancy characteristics.

HISTORY OF HOUSING CONSTRUCTION

There has been a significant increase in the number of new homes built every decade since 1960. This is particularly true of the 1970s when the number of structures built tripled. This trend continued through the 1980s with a 93% increase in housing construction.

Figure 7.1
Housing Construction

Source: U.S. Census Bureau, 1990 Census of Population and Housing, 2000
Housing Unit and Typology

The most predominant housing type in Lorena is single-family detached housing (Table 7-1). According to the 1990 U.S. Census, Lorena has a higher percentage of single-family housing than that of Texas by 20%. On the other hand, the City’s stock manufactured homes and multi-family housing with 5 or more units is significantly less than McLennan County and the State of Texas.

Table 7.1
Dwelling Unit Per Structure 1990

<table>
<thead>
<tr>
<th>Housing Type</th>
<th>Lorena</th>
<th>McLennan County</th>
<th>Texas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-unit detached</td>
<td>349(83.5%)</td>
<td>52,451(66.5%)</td>
<td>4,388,813(62.6%)</td>
</tr>
<tr>
<td>1-unit attached</td>
<td>10(2.4%)</td>
<td>2,122(2.7%)</td>
<td>215,201(3.1%)</td>
</tr>
<tr>
<td>2 to 4 units</td>
<td>22(5.3%)</td>
<td>5,840(7.4%)</td>
<td>390,675(5.6%)</td>
</tr>
<tr>
<td>5 to 9 units</td>
<td>4(0.9%)</td>
<td>3,724(4.7%)</td>
<td>343,049(4.9%)</td>
</tr>
<tr>
<td>10 or more units</td>
<td>28(6.7%)</td>
<td>9,997(12.7%)</td>
<td>1,040,600(14.9%)</td>
</tr>
<tr>
<td>Manufactured units</td>
<td>5(1.2%)</td>
<td>4,723(6.0%)</td>
<td>630,661(9.0%)</td>
</tr>
<tr>
<td>Total housing units</td>
<td>418(100%)</td>
<td>78,857(100%)</td>
<td>7,008,999 (100%)</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, 1990 Census of Population and Housing, 2000

Owner Occupied Housing Unit Values

Housing values are important for a variety of reasons and to a variety of stakeholders including the City, current residents, and potential residents. The City is able to provide services to its residents as an indirect result of property taxes, which are based on housing values. The school system is also supported through property taxes. Housing values also affect the cost of living, which is often a factor in the decision to move or relocate to an area.
Using 1990 U.S. Census data, the median value of owner occupied housing units in Lorena is approximately $59,400. It is important to note that this data is ten years old. The following graph demonstrates the approximate number of housing units per housing value range in Lorena.

**Figure 7.2**

**Housing Values**

![Bar graph showing housing values](image)

*Source: U.S. Census Bureau, 1990 Census of Population and Housing, 2000*
Rental Rate

With housing values, rental rate is also an important factor to current and potential residents. Rental rates in Lorena are lower than both McLennan County and the State of Texas.

![Figure 7.3: Contract Rent](image)

Source: U.S. Census Bureau, 1990 Census of Population and Housing, 2000

Household Occupancy Characteristics

At 5.7%, Lorena has a lower vacancy rate than both McLennan County (11%) and the State of Texas (13.4%). Seventy-three percent of the homes in Lorena are owner-occupied, which is significantly greater than that of the County and the State.

Table 7-2

1990 Dwelling Occupancy Characteristics for Lorena, McLennan County, and Texas

<table>
<thead>
<tr>
<th></th>
<th>Lorena</th>
<th>McLennan County</th>
<th>Texas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vacant</td>
<td>24 (5.7%)</td>
<td>8,649 (11%)</td>
<td>938,062 (13.4%)</td>
</tr>
<tr>
<td>Occupied</td>
<td>394 (94.3%)</td>
<td>70,208 (89%)</td>
<td>6,070,937 (86.6%)</td>
</tr>
<tr>
<td>Owner-Occupied</td>
<td>307 (73.5%)</td>
<td>41,352 (52.4%)</td>
<td>3,695,115 (52.7%)</td>
</tr>
<tr>
<td>Renter-Occupied</td>
<td>87 (20.8%)</td>
<td>28,856 (36.6%)</td>
<td>2,375,822 (33.9%)</td>
</tr>
<tr>
<td>Total</td>
<td>418 (100%)</td>
<td>78,857 (100%)</td>
<td>7,008,999 (100%)</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, 1990 Census of Population and Housing, 2000
SECTION

8

Transportation
INTRODUCTION

The City of Lorena is located along Interstate 35 (I-35) and the Union Pacific Rail Road (UP). These two major features divide the city into three parts: east of I-35, a central portion between I-35 and UP, and west of UP. Given these physical features, it would be impossible to pursue balanced development without prudent consideration or planning of the City’s transportation system. In addition, an efficient and well-designed transportation system plays a major role in the economic and social well being of the community.

ROADWAY TRANSPORTATION

It is helpful to know the function of each roadway so as to deal with it adequately in the process of planning. The following are the four major functional types of roadways. This kind of classification can be applied to the Lorena (Map A9).

- Expressways, Freeways, or Interstates
- Arterials
- Collectors
- Local Streets
Upper Level Plan
There is an “upper level plan” for the Lorena transportation system being prepared by the Federal Highway Administration (FHWA) and the Department of Transportation in Texas, Oklahoma, Kansas, Missouri, Iowa, and Minnesota. The following issues related to Lorena are being considered in the plan.

- Increase of number of lanes from 4 to 6
- Improvement of entrance/exit ramps: redesign of the ramps from short slip ramps to extended run ramps
- Improvement of frontage roads: widening and consideration of change of the system to one-way
- Enhancement of safety features including signage and signals

Though final decisions have not been made regarding the I-35 Corridor as it runs through Lorena, TxDOT speculates that most of the widening will occur to the east side of I-35. The final plan will be presented in early 2002.

Traffic Accidents
One of the most important reasons for planning is safety. According to the accident reports of the Lorena Police Department, there were 30 traffic accidents in the city between January 1, 2000, and October 11, 2000. Surprisingly, about 38% of the total accidents that were not on I-35, have been near the intersection of West FM 2837 and the I-35 South Frontage Road. Interviews with residents and the chief of police identify the main problem as the shape of West FM 2837, and the complexity created from South Bound Frontage Road with a two-way system. Map A-10 shows the area.
Map A-10
Transportation Problems

Legend
- City Limits
- Problem Areas
- Confusing
- Intersections too close together
- Narrow Intersection
- Need Turning Lane
- No Railroad Crossing Arms
- High Accident Area

0.3 0 0.3 0.6 0.9 Miles

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College of Architecture
Texas A&M University
2000

Base Map Source:
City of Waco
Texas Target Cities Team
Interstate

I-35 is the primary roadway within the City Limits and is managed by TxDOT. I-35 has two frontage roads with two-way traffic flow. In addition, there are two entrances to the city from I-35. The photographs below show that these two frontage roads make the entrances more complicated.

Although I-35 begins in Duluth, Minnesota, and ends in Laredo, Texas, Lorena residents primarily use it for commuting to Waco. Table 7.1 shows Average Daily Traffic (ADT) counts on I-35 within the City Limits.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ADT</td>
<td>4,200</td>
<td>5,500</td>
<td>12,300</td>
<td>18,700</td>
<td>36,000</td>
<td>47,200</td>
</tr>
</tbody>
</table>

Source: www.i35waco.com

Arterial Streets

FM 2837, which is also managed by TxDOT, is the only arterial street within the City Limits. It is the primary carrier of east-west traffic. West FM 2837 gives the city an alternate route to Hewitt and Waco, and East FM 2837 is connected to Highway 77; however, the two parts of the road are not connected directly. In addition, West FM 2837 beginning at the overpass of I-35 located north of the city has a serious design flaw (Map A10).
Collector Streets
Collector streets can be divided into two categories: residential collectors and commercial collectors. It is difficult to make this distinction in Lorena because, with the exception of the two frontage roads, the other major collector streets such as Center Street and Borden Street provide both commercial and residential access. In other words, almost the same level of maintenance and traffic control exists on collector streets as on local streets.

Local Streets
As seen on Map A-9, all other streets in the city are local streets providing direct access to residential homes. Generally, local streets are cul-de-sacs and curvilinear streets. Curbs and sidewalks are not founded except in newly developed or developing areas.

Existing Traffic Control
The traffic control measures of the city include speed limits, stop signs, yield signs, and other traffic warnings; however, there is no signalized intersection in the City Limits.

Public Transportation
Although there is no public transportation system operated by the city, two public transportation services, S311 and Title 3, are operated by Central Texas Senior Ministries Transit (CTSM), which is one of four subcontractors of the Heart of Texas Council of Governments (HOTCOG). These two services provide an alternate way to reach to Waco and operate on a call in basis; however, there is some difference between the two services. S311 is operated for people under the age of sixty and Title 3 is for people over sixty. In addition, vans for Title 3 are designed so that people with disabilities can use them, as is required by the Americans with Disabilities Act (ADA).³
PEDESTRIAN AND BICYCLE FACILITIES

Currently, there are limited pedestrian facilities and no bikeways within the City Limits of Lorena. Existing facilities are poorly maintained and most pedestrian paths are not paved. However, there is enormous potential, especially in the downtown area. As seen in the photographs to the right, an alley parallels Bordon Street and crosses Center Street. This area is mainly used for pedestrians as well as service vehicles. Successful path design in the downtown area will encourage pedestrian traffic, but not prohibit vehicular traffic.

RAIL ROAD TRANSPORTATION

Most trains passing through Lorena are freight trains. The contents vary from coal, some import autos, aggregate (rock and cement), and chemical freight (such as plastic pellets), export grain, food products, such as corn syrup, molasses, and flour, and autos and auto parts to and from Mexico.4 Passenger trains only pass through the city six times a week on the Chicago-San Antonio route.

Because there are substantial limitations to changing the route the railroad should be considered as a safety hazard. Three roadways, West FM 2837, Center Street, and Larkins Street, intersect with the railroad within the City Limits. There is no safety mechanism at the intersection with Larkins Street. The intersection was created for bus access to the former middle school. Because school buses no longer need access to the site, access to the crossing should be reconsidered. Consideration should also be given
to the potential threat of hazardous spill from rail accidents although there has not been such an incident reported within the City Limits. Between 1992 and 1996, an average of five rail cars each year in Texas had released hazardous material as the result of train accidents\(^5\), and the freight trains passing by Lorena actually are carrying hazardous material as mentioned above, Lorena should also prepare for such an event.

**AIR TRANSPORTATION**

There is not an airport within the City Limits of Lorena. However, the residents of the city can use Waco Regional Airport (ACT) that is located five miles northwest of Waco. Privately-owned commuter airlines provide flights from Waco to the Dallas-Forth Worth Airport and Houston's George Bush Intercontinental Airport. In addition, monthly round trip jet service is available to Elko, Nevada, and New Orleans, Louisiana. Currently, ACT has two paved runways: one 6596-feet in length and the other is 5896 feet in length\(^6\).

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3 [http://www.dot.state.tx.us](http://www.dot.state.tx.us), 5 October 2000
4 Paul DeLuca, the fleet managers of UP, personal communication by e-mail, 5 May 2000.
5 [http://www.rrc.state.tx.us](http://www.rrc.state.tx.us), 5 October 2000
SECTION 9

Urban Infrastructure
INTRODUCTION

Urban infrastructure is the system that holds a city together and keeps it functioning. Water and wastewater systems, storm sewers, and solid waste management keep the city healthy and functioning. The City of Lorena provides some of these services, such as wastewater treatment and contracts for other services, such as waste management, with private companies. These services are funded through taxes or usage fees. In order for a city to function efficiently, its infrastructure should have large enough capacities to accommodate the current population as well as to allow for future growth. The following sections show the current conditions for Lorena’s urban infrastructure.

WATER SYSTEM

The water supply for the City of Lorena is obtained through a contract with the Brazos River Authority. The water is extracted from two wells in the Trinity Sands Aquifer, which is fed from Lake Whitney. These wells can pump a maximum of 1,200,000 gallons a day.

After being pumped, the water is chlorinated and then stored in two water towers until it is needed. Lorena’s 2 water towers have 80,000 and 200,000 gallon storage capacities respectively. The larger of the two is also the newest, coming into use in the year 2000. The smaller tower was constructed in 1992. The city also has 500,000 gallon and 200,000 gallon storage units located at well sites; however, even with this water storage capacity, the City is sometimes unable to meet its peak demand. Recently, the City had to resort to water rationing due to a state-wide drought; however, this is only a short-term solution, as prolonged rationing would have a negative effect on city development.
Consequently, the City of Lorena has decided to add a new water source to the potable water system. Lorena is negotiating a contract with the City of Robinson for reverse osmosis treatment of surface water from Lake Whitney.

There are 485 connections to the water system within the Lorena City Limits with 330 additional connections outside of the city eliminating the need for private wells. Through these connections, the city has an average demand of 500,000 gallons of water daily with a peak demand in the summer of 800,000 gallons per day. With a maximum storage capacity of 700,000 gallons Lorena faces water storage problems in the summer months.

The water system pipes are made of three different materials: asbestos concrete, polyvinyl chloride (PVC), and steel. They range from 2 to 10 inches in diameter with most being 6 inches.

**WASTEWATER TREATMENT**

The City of Lorena operates one wastewater treatment facility, built in 1984, along with four lift stations. Normally, sewer treatment systems rely on gravitational flow to move the wastewater from its place of origin to the treatment facility. In cases where topography does not permit this type of movement, lift stations are used to push the wastewater uphill so that it can continue toward its destination.

Lorena's wastewater facility serves everyone within the City Limits and parts of the ETJ - 1,528 people - and is permitted by the Texas Natural Resource Conservation Commission (TNRCC) to treat 150,000 gallons of sewage per day. On average, the facility treats about 100,000 gallons per day, approximately 67% capacity. At this level
Map A-11
Sanitary Sewer System

Legend

- Sewage Treatment Plant
- Lift Stations
- Sewer Pipes

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Base Map Source:
City of Waco
Texas Target Cities Team
Map A-12
Water System

Legend

Water Pipelines

Water Structures
- Plant #2
- Plant #3
- Well #2; Plant #4
- Well; Plant
- Storage Tank

0.4 0.4 0.8 Miles

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2000

Base Map Source:
City of Waco
Texas Target Cities Team
of capacity the City should immediately begin planning for expansion.

Approximately two-thirds of the pipes in the system are made of clay tile. The remaining, newer pipes are PVC type. Most of the local pipes are 8 inches in diameter. These smaller pipes merge together into larger ones as they approach the treatment facility.

This facility utilizes the "extended aeration activated sludge" method to process wastewater. This means that the plant uses oxygen bubbles (aeration) to help microorganisms (activated sludge) to break down organic matter more efficiently than simply mechanically removing impurities.

The major recurring problem with Lorena’s sewer system at this time is inflow and infiltration. Many of the older clay pipes have defectively sealed joints. When heavy rains come, storm water leaks into the pipes either from outside entry points such as faulty manhole covers (inflow) or from underground through cracks in the pipes (infiltration). This causes unnecessary volume to enter the treatment facility and forces it to operate over capacity. As PVC pipe replaces the clay, the city hopes that this problem will be alleviated.

Another important issue in Lorena’s wastewater treatment policy is the way that it disposes of dewatered sludge. Applying the sludge byproduct to non-food producing farmland is an alternative to burying the sludge in a landfill56. This practice is more environmentally friendly in that it does not add a potentially recyclable material to the landfill and it adds nitrogen, phosphorus, and potassium to the soil.

**SOLID WASTE MANAGEMENT**

Waste Management, a nation-wide solid waste management company, has an exclusive franchise contract with Lorena. This franchise agreement calls for the City of Lorena to collect
money through the utility bill each month to pay Waste Management, and Waste Management pays the City of Lorena a franchise fee for use of the streets. This contract is self-renewing every five years unless otherwise told, and rates are adjusted according to the cost of living, from one to four percent.

Waste Management provides services to approximately 485 residential homes, twenty-one small businesses, and twenty-eight commercial units in Lorena. Garbage pick-up schedules for residential and small businesses vary between once and twice a week depending on the contract.

Lorena residents are allowed to set out no more than 5-7 bags of garbage by the street or in a plastic cart provided by Waste Management. This garbage is picked-up by Waste Management trucks and delivered to Lacy Lakeview Landfill, which is north of Lorena. Lacy Lakeview Landfill’s expected remaining life span is eighteen years.

Waste Management has a recycling program in Lorena as well. Residents place recyclable materials in blue containers that are left by the street for pick up. Waste Management garbage collectors separate the recyclable material and send it to a nationwide recycling company. Citizens are allowed to take hazardous materials to the Lacy Lakeview Landfill for free with a local utility bill. Waste Management also participates in City Clean-up Days by donating large containers for hazardous materials and then picking them up.

**STORM SEWERS**

Storm sewers function to collect rainwater and channel it into larger, natural or man-made bodies of water such as rivers and streams or detention ponds. Impervious coverage, such as concrete or asphalt, does not allow rainwater to drain into the ground. Areas that have a high percentage of these materials may become flood-prone. Currently, Lorena does not have a storm sewer system. As the City and its amount of impervious ground cover grow, Lorena will need to implement storm sewer construction policies for new development occurring within the City Limits.
SECTION
10
Community Facilities & Services
INTRODUCTION

Community facilities and services are important as they promote a safe and healthy environment for people to live in. These include City Hall, police services, fire services, schools, health services, public parks and recreational facilities and others.

CITY GOVERNMENT

City Hall

The City of Lorena has a Mayor/Council type of municipal government. The City has 2 departments, Public Works and the Police Department. It has 18 employees, 16 of which are full-time. The city also has a Planning & Zoning Committee, a Master Plan Committee, an Economic Development Corporation, and a Board of Adjustments. Lorena’s City Hall (see the image at right) is located at the corner of Center Street and Borden Street. The site was originally the location of one of the oldest post offices in the county. It has been used as the City Hall for approximately 25 years. City Hall has 4 full-time employees and it houses two office spaces. However, there is an appreciable lack of meeting and storage space (especially fire resistant) in this facility. As a result, the City is now pursuing an alternative site or construction of a new building on the present site.
Police Services
The Lorena Police Department (LPD) has 1 station located on the north frontage road. At present, it has 3 full-time officers and 2 reserve officers. According to the FBI, municipal police departments average 2.2 officers per 1,000 residents. Lorena has 1.79 full-time officers per 1,000 which is below this level. There are plans to add a fourth full-time officer in the near future though. Once this officer is hired, the LPD will be above the FBI average. The police department has 3 vehicles but hopes to expand the fleet soon as well. At the moment, it is unable to offer any special programs such as community outreach.

Between June 2000 and mid-October 2000, the police have responded to between 200 and 250 calls and made less than 10 arrests. A significant amount of the calls related to accidents; however, they answered a wide variety of other calls including domestic violence, fraudulent check writing, and attempted burglary. Most of the calls are not major problems though. The police department does not operate its own 911 system but is part of the McLennan County system.

The police department is assisted by:
- Bruceville Police Department
- McLennan County Sheriff's Department
- Texas Department of Public Safety
- Federal Bureau of Investigations
- Immigration and Naturalization Services
- Texas Rangers
Fire Services

The Lorena Volunteer Fire Department (LVFD) was formed in 1951 and is one of the largest volunteer fire departments in McLennan County. It is very common to have volunteer fire departments in towns of this size. According to a National Fire Protection Association survey, 96% of towns with less than 2,500 residents are served by all volunteer fire departments. Currently, it has approximately 20 volunteers. According to the State Board of Insurance’s Key Rate Schedule for Grading Cities and Towns of Texas with Reference to their Fire Defenses and Physical Condition, this is the minimum number a volunteer fire department should have. As the city population nears 10,000, it should consider creating a paid fire department.

The volunteers are primarily trained in-house although some of them have attended the Fire School at Texas A&M University or other training sessions throughout the state. The department operates out of a fire station (see the image at right) in downtown Lorena that was finished in 1988. The front half of the building functions as the fire station and the rear half was designed for use as a community center.

The Lorena Volunteer Fire Department provides fire, EMS, search and rescue, and extrication services to an area that is roughly 52 square miles. The equipment it uses includes:

- a 5,000 gallon tanker truck
- a 1,200 gallon tanker truck
- 2 pumper trucks
- 3 grass attack units
- an EMS/Rescue truck.

The Department is working to develop a multi-response trailer that would contain equipment to be used in a variety of response settings. In addition, the LVFD has a Bullard Thermal Imager. It is the first fire department in the county to own this
equipment. It allows firefighters to detect small differences in temperature which will allow the department to do a variety of things including locate people when visibility is restricted by darkness or smoke, search for hot spots in a fire, or check for gas leaks. In 1999, the Department received approximately 140 calls, of which, approximately 90% are from outside Lorena’s city limits. The funding for the department is primarily from donations, although the City and County do provide some funds.

The LVFD publishes a phone book for the city each year. It has also given public talks about fire safety to community groups such as the American Association of Retired People. It has participated in the middle school’s Health and Safety Day. It also operates a Fire Safe House for the second graders to teach them the appropriate response to a fire.

PUBLIC SCHOOLS

The Lorena Independent School District (LISD) is rated Academically Exemplary for high achievement in attendance, dropout rate and TAAS scores. The school district operates 3 schools - an elementary school, a middle school and a high school as well as cooperating with other school districts to provide acceleration/at-risk and discipline alternative education programs.

The elementary school is for grades kindergarten through fourth. The main building of the elementary school is 20 years old. A new wing was added 17 years ago, with 4 additional classrooms added last year bringing the school’s capacity to 520 students. The current enrollment is 497 students.

LISD’s middle school (see image at right) is for grades 5 to 8. The middle school is only 3 years old and has a capacity of 625 students. There are 498 students enrolled at the present time. The high school consists of grades 9 through 12. The high school is 14 years old and is currently
undergoing work to upgrade the facility and add 16 new classrooms. The high school can hold 600 students and has an enrollment of 470. The high school has a distance learning lab where students can have live or interactive classes with McLennan Community College or other school districts. They are also starting a horticulture class this spring.

The school district has 86 full-time teachers who average 12 years of experience higher than the state average of 11 years. It also has a 96.6% percent attendance rate and a dropout rate of 0.0% which are both better than the state averages of 95.3% and 14.7% respectively. The school district has a student to teacher ratio of 16.5. This exceeds the target of 18 established by the U.S. Department of Education's Class-Size Reduction Program.

In the LISD, 41% percent of the students graduating in 1998 achieved the minimum standard for graduation while 17.6% graduated from the Recommended High School Program. Fourteen percent graduated from Advanced High School Programs. An additional 19% graduated from Advanced Honors Program. About 85% of the graduates enter post-secondary education.

HEALTH SERVICES

The Providence Clinic-Lorena is located on the north Frontage Road. It provides out patient services Monday through Friday between 8am and 5pm.

The clinic belongs to the Providence Healthcare Network that operates 6 other health care facilities in the area. Through the network, people have access to specialized services including pediatrics, psychiatry, psychotherapy, obstetrics, gynecology, internal medicine and geriatrics. Through the network, people also have access to the following facilities in Waco:

- Providence Health Center
- De Paul Center
Community Facilities and Services

- St. Catherine Center

The Providence Healthcare Network also owns the vacant lot next door and is considering expanding the facility; however, it is in the evaluation process and will not make any decisions until next year.

Additional healthcare facilities are available in the surrounding communities. The Scott & White Hospital and Clinic and the King’s Daughter Hospital are located in nearby Temple, Texas while in Waco, there are:

- Hillcrest Baptist Medical Center
- Community Hospice of Waco
- Department of Veterans Affairs Medical Center
- Scott & White Clinic
- Integrated Clinical Facility

Rural Metro Ambulance, based in Waco, provides Emergency Medical Services to the community.

PUBLIC PARKS AND RECREATIONAL FACILITIES

The City of Lorena has one neighborhood park, McBrayer Park, which is located at the corner of West Front Street and Center Street (see the image at right). The park’s 2 acres of land was donated by the McBrayer family with the stipulation that it be used as a park or the land would be returned to the family. The park is currently managed by the Public Works Department. According to park performance standards, a neighborhood park is a park that serves an area for intense recreational activities with geographically accessible site characteristics; however, McBrayer Park lacks facilities for activities. Also, the absence of a sidewalk or bike trail system makes accessibility a problem. Amenities at the park include several pieces of playground equipment, picnic tables, barbecue pits, trashcans, and a covered pavilion. Park problem areas include the railroad tracks that border the park to the northeast and the

City of Lorena, Texas
uncontrolled weeds that serve as the northwest side boundary. Besides being unsightly, these are potential safety problems.

OTHER COMMUNITY FACILITIES AND SERVICES

Post Office
Lorena has one U.S. Post Office located on the North Frontage Road. The image to the right shows the post office. It has been serving Lorena for 15 years at this location.

Churches
There are 5 churches in Lorena.

- Lorena United Methodist Church
  The Church hosts an annual Harvest Festival every fall, operated a day school and is home to a Boy Scout pack. With the Baptist Church they operate a Meals on Wheels program.
- Lorena First Baptist Church
  Fall Family Fun Night is an annual activity organized by this Church. They also have a Divorce Support Group and Vacation Bible School every summer.
- Church of Christ
- Christian Church
- Grace Temple

Public Library
Lorena does not have a public library. Since Lorena’s population is below the community development standard level, which requires at least 5,000 people to have a public library, a public library is not needed at this time. The closest library is in Hewitt, located approximately 4.5 miles away.
Community Facilities and Services

Cemetery
The Lorena Cemetery is located on West Front Street, on the south side of Lorena. Its original tract of 2 acres was first dedicated to pioneer settlers as a burial ground, and was later established as a cemetery in 1881. It is now owned and managed by the Cemetery Association. The image to the right shows the historical marker, which was erected in 1981.

Civic Organizations and Clubs
Civic organizations and clubs in Lorena include:

- Women’s Club
  Founded in the summer of 1900, the Women’s Club is currently housed in the former Home Economics Cottage on the grounds of the former middle school. The club has extensively remodeled and improved the Cottage. Most of their fundraising activities have been related to school system. Since the Lorena Parent Teacher Association was created in 1961, the group has shifted its focus to cultural and community beautification pursuits. The Women’s club has organized a beautification program for the City and is currently working to establish a learning center and library as well as a historical museum.

- Cemetery Association
  According to the historical marker, the Lorena Cemetery Association was established in 1914 to provide funds for the maintenance of the site. In 1970, a perpetual care fund was set up by the organization. The association still owns and manages Lorena cemetery.

- Youth Council
  The Youth Council was initiated by the City to be an advisory board on community issues. The Youth Council is currently working with the Lorena Cemetery Association to develop a database of the cemetery.
- The Community Action League of Lorena

The Community Action League sponsors a community wide garage sale every year in conjunction with the Lorena United Methodist Church Harvest Festival.

Other organizations include:
- Lorena Saddle Club
- Lorena Little League
- Masonic Lodge
- Lorena Band Boosters
- Lorena Chapter of the American Association of Retired Persons
- Lorena Morning Glory Garden Club
SECTION
11
Community Image
Section 11

Community Image

INTRODUCTION

Community Image is the total impression created by a city. It consists of a community's physical appearance, including natural and man made elements. A positive community image can not only increase the city's attractiveness to the visitors, but also improve the quality of lives of the residents.

The City seeks to create a positive image of Lorena celebrating its natural and built environment and the rich and varied lifestyle opportunities available to its citizens. This section is an inventory of community image features in Lorena.

GATEWAYS

Every city needs physical identifiers to give citizens a feeling of belonging and visitors a good first impression. Planners refer to these identifiers as "Gateways." Lorena has two major gateways. One is on Interstate 35 (I-35) at the northern boundary of the city and the other one is at the intersection of Oak Street and Walter Street. Each has a billboard sign welcoming motorists. Although the signs themselves have good qualities, there are two problems with them as gateways. First, the current locations of gateways in the city are not as effective as they could be. Above is a picture showing the gateway on I-35. Because this is the only gateway visible from I-35, it connotes a negative image of the city due to the leaning poles. Perfectly positioned on I-35, well-designed and strategically placed gateways can be a potent force in projecting a municipality's urban image. Therefore, appropriate size and landscaping for visibility and attraction are recommended.
OVERHEAD UTILITY LINES

Utility lines are a necessity in every city but can easily create visual clutter if they are not well planned and maintained. At their worst, they can pose a safety threat to citizens and property. Consequently, it is important that the City of Lorena not only consider the aesthetics of overhead utility lines but also their effect on public health and safety.

In the downtown area along Center Street and Borden Street, overhead utility lines are prominent. This detracts from the visual image of the historic structures and poses safety issues. Although Lorena does not have a problem area at this point, it is recommended that Lorena pursue the location and relocation of utility lines underground or behind buildings in the future.

STREETS

Streets are complex elements in the urban image framework. They facilitate the movement of traffic, provide access for emergency vehicles, accommodate parked cars, provide passage for pedestrians, and sometimes constitute an important part of a city's open space.

The streets of Lorena are typical of communities with predominately residential land use. Streets in Lorena can be classified into three types.

- Well paved, wide streets with curb and gutter
- Unpaved narrow streets without curb and gutter
- Damaged streets

Overall, most streets are well maintained and in good condition, but there are some problems. This photo was taken near downtown (along the railroad). Its deteriorated condition is readily apparent. Streets of the same condition are also found in the western section of city.
There are large sections of the frontage road that have no curb and gutter. For many businesses that front on I-35 there are no trees or landscaping to buffer them from the frontage road and highway. Not only I-35, but also most residential areas, even most streets around downtown lack curb and gutter. Curb and gutter is only found in newly developed residential areas. Additionally, there is not a bike lane or trail in the city. These problems discourage pedestrian traffic and make areas unattractive. Residential areas are short of community identity.

**Sidewalks and Bicycle Paths**

The pedestrian system in Lorena is very limited. The sidewalks downtown along Center Street are well maintained. However, there are the small, disjointed segments of sidewalk along the west side of Oak Street, which are largely overgrown with grass and weeds. These are the only paved sidewalks in the city. None of the residential areas of Lorena have sidewalks. The absence of a unified sidewalk system inhibits safe pedestrian traffic in both the commercial and residential areas. Lorena, with such a rich heritage, needs a unified pedestrian system to encourage a walking tour program.

**Signs**

Signs in Lorena present a problem not because of their abundance, but because of the image that they project. This photo is an example of this problem. Sign posts with missing panels have a negative impact on Lorena's urban image. Some of the signs on the frontage road of I-35 are poorly maintained and unattractive. These signs are particularly noticeable and present a negative impression to people traveling this route. Well-maintained signs can create unified urban image. Consistent signs that can portray an image of Lorena as 'a village of antique shops' are recommended.
LANDSCAPE

Landscape is an environment in which people act and to which they react. Most buildings around downtown are landscaped and well maintained. Many houses have well-maintained landscaping. It is not only a good environment for homeowners, but also beautifies the city. However, along I-35 and in the west of city, there is an obvious lack of landscaping. Most commercial developments along I-35 come right to the street without any landscaping to serve as a buffer. Some buildings do not have any landscaping to screen less attractive items such as dumpsters. Some utility facilities do not have any landscaping around them. As the photo shows, this “gateway” of Lorena stands alone in a large vacant lot. There isn’t any landscaping, which results in a hard-edged and uninviting image.

WEEDS

Weeds are a problem for all cities. Lorena lacks weed control in some areas. Weeds growing up through streets, sidewalks and parking lots present a bad impression to visitors. Weeds grow on some vacant land, even near downtown and some street intersections. This presents an appearance of deterioration and indifference towards urban image. Another problem is the weed growth along the railroad near downtown and the frontage of I-35. The photo above was taken at the intersection of Hatch Road and West Front Street.
TRASH AND LITTER
Today glass bottles, plastic packaging, tin cans, newspaper and other types of trash litter urban and rural landscapes everywhere. Lorena is a relatively clean city. Most residential areas and the downtown area are free of trash and litter; however, there are some problem areas. First is the trash in vacant land and around buildings along I-35. It presents a bad impression of city. The second is in some older residential areas in the western section of the city.

OPEN SPACE AND PARK
Cities should provide places for people to interact with each other and to enjoy nature. Cities should also provide healthy play spaces for children and families. Open space and parks encourage passive uses such as strolling, sitting, viewing, picnicking, public gathering, and active uses such as competitive sports, running, etc. Lorena does not have enough park and open space. This photo shows McBrayer City Park near the downtown, the only public park in the city. It is short of beautiful natural resources and recreation facilities.

BUILDING MAINTENANCE
Most of the businesses and residences in Lorena are well maintained as the picture to the right shows. However, many older single family houses in the west of city are in various stages of deterioration. Some commercial properties are poorly maintained. Analysis of video from the Target Cities Team windshield survey shows that there are a number of deteriorating and deteriorated buildings in Lorena.
TREES AND PLANT MATERIAL
The City of Lorena is fortunate to have a diverse collection of natural plant materials. Trees, shrubs, and plants of all kinds can reduce the harsh edges of urban development. They are an important factor in urban image. In the areas of downtown, new residential areas and most other areas, trees act as a positive role and beautify the city. In some commercial and light industrial areas along I-35, there are few trees and little natural vegetation. The resulting visual image is unimpressive. Strategic use of trees and shrubbery in this area could mask some of the structures that detract from the urban image of Lorena.

VACANT BUILDINGS
The City of Lorena has many well-maintained commercial and residential buildings. However, there are several empty structures of both types that serve as unpleasant aberrations to an otherwise picturesque façade. Although there are a few empty buildings that are in good repair, several other unoccupied buildings have fallen into a deteriorated state. The worst of these are residential and are located on the west side of the railroad tracks. The fact that the buildings are empty is not necessarily problematic. The dilapidated condition of some of the structures is what compromises the urban image of the city.

URBAN BLIGHT
Urban blight may be generally defined as anything that contributes to the deteriorated condition of a city.² Although the City of Lorena does not have any significant blighted areas, it is worth noting that unkempt, empty structures such as those mentioned in the previous section are often the spores from which urban blight grows. One or two deteriorating, unoccupied buildings do not make for
urban blight, but a continuation of that trend could do damage to the image of Lorena that is not easily rectified. Moreover, even occupied structures could foster a blighted image if they do not exhibit a minimal amount of up-keep. [For example, there are several historic, wood-frame homes near downtown Lorena and within the surrounding area.] Failure to maintain the wooden exterior and landscaping along with an inordinate amount of clutter in the yards could contribute to a blighted image. There are also several commercial structures along the west side of I-35, which, due to their deteriorated exteriors, weaken Lorena’s urban image. The picture above is of a deteriorated antique shop. This is the first building that one sees after passing the “Lorena Welcomes You” sign on the north end of I-35.

**DOWNTOWN**

The downtown area of Lorena is definitely an asset to the City. With its historical buildings and specialty shops, Downtown Lorena is still quite vital, despite some unoccupied units. The street and sidewalk of Center Street are in good repair, but the sidewalks of Oak Street are overgrown with weeds. At one time this must have provided a good pedestrian route to Center Street. Downtown Lorena would be well served in restoring them. The absence of trash receptacles and public restrooms in the downtown block of Center Street is also rather conspicuous. Although the central location of the city hall building in downtown Lorena is good, the physical structure itself does not fit in with the historical character of the other buildings in the area.
HISTORIC RESOURCES
The City of Lorena has many historic resources. Several commercial buildings in the downtown area along with numerous historic homes add a special visual charm to the city. With the exception of the Methodist church on Borden Street and the Lorena Cemetery, the city does not currently have markers or signs to point out its historical structures to visitors. The old church on Houston Street is a historically significant structure and could be restored.

UNDERUTILIZED RESOURCES
Lorena has three very unique structures that are currently unused. The first is the old church on Houston Street shown at right. Another is the silo on Old Temple Road. With renovation and landscaping either one of these could be adapted for a new use. The unoccupied historic house on the corner of Center Street and Oak could also be useful with proper renovation.

CONCLUSION
Community Image addresses the functional and visual relationships between people and their physical environment and the ways in which those relationships can be consciously improved. The Community Image of Lorena has many positive features and well-designed elements. It also has many things need to be improved. There are many examples of fine streets, public places, and neighborhoods, etc that, if brought together, would create magnificent Community Image.
SECTION
12
Historic Resources
INTRODUCTION

Historic resources are those structures, sites, buildings, or objects that contribute to the historic or architectural heritage of a place. Lorena is fortunate to be rich in historic resources. It is important to protect these resources for the cultural education of future generations, for the general welfare of the community, and for the financial stimulation that they can provide for the local economy. Planning for preservation, like all other types of planning, is not about control. Rather, it is about guiding and directing change for the greater benefit of the community. Many people are surprised to learn that historic resources are not limited to county courthouses and ornate Victorian homes. A structure is considered historic if it is at least fifty years old or is associated with significant events of the recent past.

CITY HISTORY IN BRIEF

Lorena was first settled in the 1850s and was platted in 1881 as a stop for the Missouri-Kansas and Texas Railroad. The Katy as the rail company came to be known was the first railroad to enter Texas from the north. Joe Aerl, hoping to permanently establish the town negotiated for the establishment of a depot. Lorena is named after the eldest daughter of the prominent Westbrook family. In 1882, a U.S. Post Office was established in Lorena with John Doe as post master. By 1904 the city had a two-story brick schoolhouse, a bank, a newspaper, and four cotton gins.
In 1917 the Texas Highway Department was established and U.S. Highway 81 was 'paved' (caliche rock) through town to aid in the transport of troops and supplies for World War I. With the passage of the Interstate Highway Act in 1956, U.S. Highway 81 became Bordon Street and traffic was rerouted out of town on the new Interstate Highway 35. The community continued to thrive into the 1930s when, like so many agrarian towns, the effects of the Depression hit home. In 1922 the Lorena State Bank and the First National Bank of Lorena consolidated under the First National name. By 1928, the bank closed its doors. The population of Lorena held steady at 324 throughout the 1930s and 1940s, but the number of businesses in the town plummeted from twenty-two in 1934 to seven by 1945. For the past fifty years Lorena has existed as a bedroom community of Waco to the north and Temple to the south.

**LOCATION**

Most of Lorena’s historic structures are concentrated in and around the downtown area. They are in fairly good condition and appear to have a high level of maintenance. Most buildings have been restored or are stabilized to prevent any further decay.

A few historic structures are not located within these district boundaries and should be given individual attention. These include the Westbrook Plantation, Ten Oaks Plantation, the silo on Old Temple Road, and the church on Houston Street.
RECORDED HISTORIC LANDMARKS

Two historic resources have been recognized with a State of Texas Historical Marker. The first, The Lorena First Methodist Church was built in 1886 after having held its first services in the Baptist Church building. The plans for the building came from church trustee Herbert J. Hudson who emigrated from Cambridge, England. The church became a Recorded Texas Historic Landmark in 1976.

The second recognized historic resource is the Lorena Cemetery. The original two-acre tract of land was set aside for settlers by founding father Daniel Aerl in 1881. The Lorena Cemetery Association was established in 1914 to provide funds for the care and maintenance of the area. In 1970 a perpetual care trust fund was established for the Association. The cemetery became a Recorded Texas Historic Landmark in 1981.
COMPREHENSIVE PLAN
INTRODUCTION

The planning process starts with knowing how many people are expected to live in a certain area by the target year. In Lorena’s case, that year is 2020. Demography uses scientific techniques to determine future population by applying birth, death, and migration rates to the current population. After one knows the projected population of a city, then it is possible to plan for the city’s transportation services, housing mix, infrastructure requirements, and other needs.

AGGREGATE POPULATION PROJECTIONS

Demographers use population data from the past to project what the future population may be. Chart 1.1 shows that Lorena’s growth from 1950 to 1990 matches very closely a polynomial curve that is calculated by using the equation shown in the chart.

Chart 1.1 Historical Population Growth in Lorena, Texas, 1950-2000 and Polynomial Growth Trendline to 2020

Source: U.S. Census, Texas Natural Resources Information System, and student calculations
Using the trend projected in Chart 1.1 by the polynomial growth curve, Lorena's population from the base year of 1990 to the target year of 2020 is presented in Table 1.1. For comparison the projected population of McLennan County is presented to show that Lorena will continue to grow at a much faster rate than the county. The average of the difference in growth rates per decade between the city and county is 36%.

<table>
<thead>
<tr>
<th>Year</th>
<th>Lorena Population (Projected)</th>
<th>Percent Change From Previous Decade</th>
<th>McLennan County Population (90-98 Migration Scenario)</th>
<th>Percent Change From Previous Decade</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>1,158</td>
<td>49%</td>
<td>189,123</td>
<td>6%</td>
</tr>
<tr>
<td>2000</td>
<td>(1,730)</td>
<td>49%</td>
<td>(200,554)</td>
<td>6%</td>
</tr>
<tr>
<td>2010</td>
<td>(2,437)</td>
<td>41%</td>
<td>(211,127)</td>
<td>5%</td>
</tr>
<tr>
<td>2020</td>
<td>(3,292)</td>
<td>35%</td>
<td>(219,732)</td>
<td>4%</td>
</tr>
</tbody>
</table>

Source: Student calculations and Texas State Data Center

According to the Target Cities projections, Lorena will experience steady growth. The municipal population projection numbers in Table 1.1 are very much in line with those held by the Texas Water Resources Development Board.1

COHORT POPULATION PROJECTIONS

It is important to know how many people will make up various age groups within a city. In the short range, large groups of children under four years of age point toward a possible increase in the next few years in the need for educational resources such as school buildings or after school programs. In the longer range, a large number of people in their 40's and 50's may indicate a need for more senior facilities, such as retirement centers, to be in place by the target year of the plan. Table 1.2 shows the projected populations, by age cohort, for McLennan County. The Texas State Data Center's Migration Scenario 90-98 is used in this table. This scenario assumes that population growth resulting from migration patterns of the 1990's will continue in the future.

It is important to know the age cohort population of the McLennan County because Lorena, and all other cities within the county, make up a proportion of this larger area.
No data exists to show age cohort projections at the municipal level for Lorena. Therefore, the proportion of Lorena’s population in each age group in 1990, as compared to the population of the same age group for McLennan County in the Census, is applied to the age cohort projections for the county resulting in the age cohort projections for the city. However, as demonstrated in Table 1.1, Lorena’s rate of growth is much faster than that of McLennan County as a whole. Therefore, Lorena’s cohort numbers are adjusted by approximately 36% to account for the difference in anticipated future growth rates. Table 1.3 shows Lorena’s age cohort population projections from 1990 to 2020.

**Table 1.2 Cohort Population Projection for McLennan County, Texas, 1990-2020 Using the 90-98 Growth Scenario**

<table>
<thead>
<tr>
<th>Cohort</th>
<th>1990</th>
<th>2000</th>
<th>2010</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>14,481</td>
<td>15,171</td>
<td>15,103</td>
<td>15,341</td>
</tr>
<tr>
<td>5-17</td>
<td>34,956</td>
<td>37,844</td>
<td>38,665</td>
<td>38,211</td>
</tr>
<tr>
<td>18-20</td>
<td>13,572</td>
<td>13,431</td>
<td>13,341</td>
<td>13,186</td>
</tr>
<tr>
<td>21-24</td>
<td>14,197</td>
<td>13,317</td>
<td>14,227</td>
<td>14,512</td>
</tr>
<tr>
<td>25-44</td>
<td>53,533</td>
<td>56,617</td>
<td>59,332</td>
<td>57,483</td>
</tr>
<tr>
<td>45-54</td>
<td>17,111</td>
<td>23,320</td>
<td>26,856</td>
<td>25,614</td>
</tr>
<tr>
<td>55-59</td>
<td>7,779</td>
<td>8,329</td>
<td>11,506</td>
<td>12,722</td>
</tr>
<tr>
<td>60-64</td>
<td>7,987</td>
<td>7,003</td>
<td>9,611</td>
<td>11,755</td>
</tr>
<tr>
<td>65-74</td>
<td>14,125</td>
<td>12,486</td>
<td>12,343</td>
<td>17,234</td>
</tr>
<tr>
<td>75+</td>
<td>11,379</td>
<td>13,047</td>
<td>13,143</td>
<td>13,674</td>
</tr>
<tr>
<td>Total</td>
<td>189,123</td>
<td>200,554</td>
<td>211,127</td>
<td>219,732</td>
</tr>
</tbody>
</table>

*Source: Texas State Data Center, 2001*

Tables 1.2 and 1.3 show that the populations for McLennan County and Lorena will become increasing older as 2020 approaches. Lorena’s largest age cohort will be from 25 to 44, but the cohort groups approaching and above retirement age will all experience significant increases, barring any unusual or unforeseen circumstances.
Table 1.3 Age Cohort Population Projection for Lorena, Texas, 1990-2020 as an Adjusted Ratio of McLennan County

<table>
<thead>
<tr>
<th>Cohort</th>
<th>1990</th>
<th>2000</th>
<th>2010</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>116</td>
<td>170</td>
<td>230</td>
<td>306</td>
</tr>
<tr>
<td>5-17</td>
<td>268</td>
<td>339</td>
<td>406</td>
<td>474</td>
</tr>
<tr>
<td>18-20</td>
<td>51</td>
<td>99</td>
<td>159</td>
<td>229</td>
</tr>
<tr>
<td>21-24</td>
<td>39</td>
<td>85</td>
<td>151</td>
<td>227</td>
</tr>
<tr>
<td>25-44</td>
<td>374</td>
<td>444</td>
<td>502</td>
<td>585</td>
</tr>
<tr>
<td>45-54</td>
<td>114</td>
<td>204</td>
<td>295</td>
<td>354</td>
</tr>
<tr>
<td>55-59</td>
<td>42</td>
<td>94</td>
<td>190</td>
<td>282</td>
</tr>
<tr>
<td>60-64</td>
<td>35</td>
<td>79</td>
<td>169</td>
<td>280</td>
</tr>
<tr>
<td>65-74</td>
<td>73</td>
<td>113</td>
<td>172</td>
<td>313</td>
</tr>
<tr>
<td>75+</td>
<td>46</td>
<td>101</td>
<td>162</td>
<td>242</td>
</tr>
<tr>
<td>Total</td>
<td>1,158</td>
<td>1,730</td>
<td>2,437</td>
<td>3,292</td>
</tr>
</tbody>
</table>

Source: Texas Target Cities Team Student Calculations

SECTION

2

Future Land Use
Section 2

Future Land Use

Goals and Objectives

Goal 1: Promote knowledge of and compliance with the Comprehensive Plan

Objectives:
- Adopt the Comprehensive Plan
- Develop a mechanism to inform the citizens of Lorena of the Comprehensive Plan to encourage citizen participation
- Make the Plan widely available to the citizens of Lorena

Goal 2: Promote infill development

Objectives:
- Develop and implement financial incentives and development bonuses for infill development
- Require that buildings be rehabilitated and designed to be more energy efficient
- Condemn and demolish buildings that are not savable and pose a threat to public safety
- Improve infrastructure service within the City limits

Goal 3: Promote the efficient use of land and infrastructure

Objectives:
- Implement mixed-use zoning
- Implement a zoning ordinance that discourages development in hazard-prone areas or environmentally sensitive areas
- Implement infrastructure improvements that are adequate and timely
- Allow only environmentally sensitive industries

Goal 4: Revise zoning ordinance and subdivision regulations

Objectives:
- Require open space in all developments
- Provide incentives for energy efficient subdivision design
- Include landscape, signage, and parking provisions for each district
**INTRODUCTION**

The Future Land Use Plan and Map is not the community’s official zoning map, which regulates land use, but is a guide to assist with decision making. In other words, it is a guide for future land use patterns. Future land uses are planned for and guided using zoning ordinances, subdivision regulations and capital improvements.

**LAND USE COMPATIBILITY**

Very few land uses are inherently bad, it is their location and execution that are problematic. Residential and non-residential land uses need to be carefully planned. While manufacturing can be good for a city’s economy the compatibility of surrounding land uses must be considered to prevent future conflicts. Siting industry close to a highway or railroad can also help the owner reduce shipping costs making the location more attractive for future businesses. Lorena’s accessibility to I-35 and the railroad should be promoted as an incentive for industries to relocate in Lorena.

One tool useful for protecting and ensuring compatible land uses are landscaped buffer strips. Buffer strips provide attractive transition areas between land uses. They help to reduce spillover of noise, odors, and visual impact from one property to another by using trees and berms. Buffers could be used to separate major transportation corridors, such as I-35 and the UP rail line and the living and working space of residents.

In addition to buffer strips, tiering land uses from highest to least intensity along transportation corridors is also recommended. Along I-35 the Planned Corridor District should be treated as a buffer separating and protecting the residential districts just beyond its boundaries:
Map B-1
Comprehensive Plan Map

Legend
- Proposed City Limits
- Proposed ETJ
- Proposed Land Use
  - Ag/Res
  - Single Family
  - Commercial
  - Business Park
  - Creek Side
  - I-35
  - Olde Town
  - Road

0.6 0 0.6 1.2 Miles

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Base Map Source:
City of Waco
Texas Target Cities Team
LAND USE RECOMMENDATIONS

Following are the thirteen land use classifications recommended as the most beneficial for the City of Lorena. In each case, surrounding land use compatibility has been considered. Specific standards and processes for each district including signage, landscaping, parking, and lighting should be outlined in a revised zoning ordinance. The recommended locations of each of the land uses districts is identified on Map B-1.

Agricultural-Rural Residential District

The 1999 EDC survey shows that 84% of Lorena’s residents are in favor of limited subdivision development and maintaining the small-town, rural atmosphere of Lorena. The purpose of the Agriculture-Rural Residential District is to maintain this rural charm while allowing for growth and expansion. Such a district will ensure that the farm and scenic values, as well as the single-family residential character, of these areas are protected from incompatible development. Agriculture, livestock, equestrian facilities, single-family dwellings, public parks, playgrounds, and golf courses are intended for this area.

Low-Density Residential

A 1999 Citizen survey conducted by the Lorena Economic Development Corporation shows 88% of Lorena’s citizens are satisfied with the quality and affordability of housing in Lorena. In order to accomplish this goal, low-density residential areas are intended for large lot, single-family residential dwellings with a maximum of 5 dwellings per acre.

Medium-Density Residential

Nationwide demographic shifts point to smaller households than in the past. In fact, more people are living alone than ever before. To help accommodate this trend, 10% of
Lorena’s housing stock should contain a mixture of patio homes, town homes, garden homes, condominiums, and luxury apartments.

Development of high quality medium-density dwellings will help increase the variety of housing product types for Lorena’s current and future population. Medium-density residential areas provide for smaller residential lot sizes, including dwelling units such as patio homes, town homes, garden homes, or condominiums.

**Manufactured Housing**

The City of Lorena should adopt a zoning ordinance that calls for manufactured housing subdivisions with the same standards as that of single-family residential development.

**Neighborhood Commercial**

As Lorena continues to grow and as residential development continues to the east and west, there will be increased demand for localized retail and commercial centers. These areas allow for low-intensity, limited retail activity and are intended to serve neighborhoods in close proximity. In addition, such uses are intended to be located at specific major roadway intersections near residential areas. Uses that may be appropriate in these areas include but are not limited to small grocery stores, pharmacies, hair salons, dry cleaners, tailors, florists, card shop, day care centers, medical/dental and general offices, financial institutions, cafes, video stores, and similar establishments.
Planned Shopping Commercial

These areas allow the same uses as neighborhood commercial areas, as well as establishments with more high-intensity uses such as:

- hardware stores
- electronic supply stores
- furniture stores
- grocery stores
- nurseries
- department stores

Olde Town District

This mixed-use district is the heart of Lorena’s history and character. Much of what is considered unique about small-towns is actually embodied in the concept of mixed-use zoning. Mixed-use zoning allows and encourages a variety of activities to coexist within one district. Mixed-uses districts combine housing, jobs and commercial services in close proximity to one another with improved pedestrian and vehicular circulation. The Olde Town District provides an opportunity for residents of Lorena to work and live within the same structure. The following are a few examples of appropriate uses:

- specialty shops
- art galleries
- restaurants
- bistros
- offices
- bed and breakfasts
- day spas
- artisan’s galleries
- retail
- residential

Redevelopment and new construction should respect the historical character and pedestrian scale of the area. The Olde Town District should be a pedestrian-friendly environment for the citizens of Lorena, as well as tourists. It should also be the heart of the community highlighting local history and housing municipal offices. Because of this the City of Lorena should pursue designation as a Certified Local Government from the Texas Historical Commission.
I-35 Planned Corridor District (ICD)

As a mixed-use district, the ICD should contain 60% commercial, and 40% either office or high density residential. This 60-40 mixture is important in order to distinguish the City of Lorena from other cities along I-35. Most cities contain approximately 100% commercial development along major thoroughfares, which creates a nameless, faceless environment. A zoning ordinance should be adopted which encourages high quality development that is functional and attractive. Luxury apartments should be strongly encouraged. Fast food restaurants should be clustered in complexes with signage and landscaping regulations.

An example of luxury apartments

The I-35 Corridor District will help buffer low-density residential land uses from higher intensity uses. This district extends 400 feet on the east and west sides of the frontage road of I-35 in most areas, the only exception is where the Olde Town District reaches the interstate. This width should be adequate for development of the district while also acting as a buffer.

Recommended uses include but are not limited to:

- hotels, motels
- restaurants
- large corporate offices
- theatres, retail shops
- professional/administrative offices
- financial institutions
- luxury low and mid-rise apartments

Luxury low-to-mid-rise apartments, should have an allowable density as low as 6 units per acre, up to 35-40 units per acre. Low-rise apartments are generally thought of as 1-5
stories, while mid-rise apartments are generally 5-10 stories high. Development of high quality luxury apartments will also increase the variety of the housing product choices for Lorena's current and future population. The use of landscape ordinances and other design control mechanisms will help promote the development of luxury apartments.

**Business Park / Manufacturing**

The manufacturing district has been sited so as to provide businesses ready access to I-35 and the railroad and with Iron Horse Iron Works in mind. The district will accommodate high intensity uses not appropriate in other areas of the city. The City should ensure that all manufacturing activity is in accordance with performance standards established by a zoning ordinance to eliminate unnecessary pollution from manufacturing operations.

With the implementation of performance standards and the utilization of buffer zones, the manufacturing district will be compatible with surrounding land uses. Possible uses for the business park include:

- environmentally friendly manufacturing plants
- automobile repair shops
- building material yards
- automobile sales lots
- warehouses
- wholesale establishments
- telecommunications/broadcasting/cell towers and facilities

**Public Facilities/Utilities**

As Lorena continues to grow, two trends will become apparent with regards to public facilities. As mentioned in the State of the City report, the current City Hall is too small and is in need of expansion. It is recommended that the City endeavor to keep all City offices in the downtown area. Future facilities
development should take into account the restrictions and challenges placed on service delivery and response time by the railroad and I-35 which bisect the City. These two transportation impediments coupled with the awkward location of the fire station on Center Street (which is hazardous to through-traffic and pedestrians) call for the relocation of the fire station in the near future.

**Schools**

School siting and facilities' planning is the sole responsibility of the Lorena Independent School District. It is strongly recommended that the City and the School District work together to ensure that school additions and new construction are compatible with City infrastructure and transportation plans.

**Institutional**

As Lorena continues to grow, participation in community organizations and institutions may increase to a level where parking problems develop. Facilities may need to expand, relocate, or develop agreements with adjacent property owners to share parking space if this issue intensifies.

**Open Space Areas**

As Lorena continues to grow both in population and geographic size, one city park will not be enough to serve the needs of all residents. Neighborhood parks and a comprehensive trail system are strongly recommended. The Community Facilities element of this plan will discuss this in greater detail.

*McBrayer Park*
Map B-2
Potential Annexation

Legend

- Existing City Limits
- Proposed Annexation

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Base Map Source:
City of Waco
Texas Target Cities Team
SECTION 3

Transportation
Section 3

Transportation

GOALS AND OBJECTIVES

Goal 1: Improve the safety of Lorena roads

Objectives
- Realign the two intersections of I-35 and the frontage roads
- Convert frontage road traffic flow to one-way
- Plan for a HAZMAT spill
- Use landscaping to help improve air quality and buffer sound

Goal 2: Provide a transportation network sufficient for current and future growth

Objectives:
- Provide another intersection between the south-western and south-eastern areas of Lorena
- Develop and implement a road maintenance plan
- Develop and implement a strategy for expanding and improving existing roads
- Predict and plan for construction of new roads

Goal 3: Provide several transportation options

Objectives:
- Construct a city-wide hike and bike trail network
- Pursue a park-and-ride program for commuters to Waco and Temple
INTRODUCTION
As an important factor enhancing the City of Lorena’s prosperity, the City’s transportation system should be considered significant. Moreover, the expected area annexed to Lorena makes the importance of the transportation plan more emphasized. Therefore, based on the assessment of the existing transportation system of Lorena, this section provides a fundamental basis for an effective transportation plan. This section consists of three parts: Roadway transportation plan, Pedestrian and bicycle network plan, and other related transportation plans.

ROADWAY TRANSPORTATION PLAN
As a dominant form of transportation in Lorena, the importance of roadway transportation can not be exaggerated. The future development of Lorena makes it possible to ensure a more perfect transportation plan because Lorena will annex its western area, which has a relatively low level of transportation infrastructure. Therefore, based on the projected traffic volume, this section focuses on designing the future roadway network.

TRAVEL FORECAST
Generally, travels are generated by two key elements: Locally-generated travel, and through traffic. Therefore, the volume of the future travels in the city limits can be projected considering the two elements.

Locally-generated Travel
Among the two elements, locally generated travel can give a greater shock to Lorena because of the spacious annexed area, and the expected development of Lorena. According to the population projection of the city, in 2020, Lorena would need about 1,124 dwelling units, about 490 units more than in 2000. In addition, the amount of land used for office and commercial purposes will generate more traffic.
Through Traffic
Through traffic is usually related to major roads having a high functional classification, such as highways and arterial streets. Within the city limits, there are two major roads, Interstate 35 (I-35), and FM 2837. However, because of the relatively high traffic volume of I-35, and its impact on Lorena, through traffic on I-35 is more focused in this section. According to the Average Daily Traffic (ADT) projection calculated by TxDOT, in 2025 the ADT in the City Limits will be approximately 95,400, twice that of 1990. (Figure 3.1) With the expansion of I-35, the increased through traffic could be considered as an important element for economic development for Lorena, rather than one of traffic problems.

<table>
<thead>
<tr>
<th>Table 3.1 ADT Projections on I-35</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
</tr>
<tr>
<td>ADT</td>
</tr>
</tbody>
</table>

Source: www.i35waco.com

FUNCTIONAL CLASSIFICATION OF ROADWAYS AND NETWORK PLAN
The purpose of classifying roads is to provide a balanced transportation system that facilitates mobility for all modes of travel at acceptable levels of service while providing sufficient access to adjacent land uses and ensuring neighborhood livability (Figure 3.1). Therefore, in order to create an appropriate roadway network, the City of Lorena should have its own functional classification and standards for each class. Roadways can be categorized into four classes, Highways or Freeways, Arterials, Collectors, and Local streets. In addition, for the City of Lorena, another kind of class, minor arterials or major collectors, between arterials and collectors is necessary because of the large proposed annexed area for future Lorena. Therefore, based on the five categories, this section classifies each road and gives standards and improvements for each class. The proposed transportation network for Lorena is shown on Map B-3.
Highways (I-35)

Currently I-35 functions well as a highway. The only foreseeable problem is increased traffic volume that should be alleviated with the widening project. However, I-35 does have some safety problems. The two-way directional system of the frontage roads increases the complexity and danger of the two intersections of I-35 and FM 2837. It is therefore recommended that the frontage road direction be changed from two-way to one-way.

![Diagram of access and movement functions of streets](image)

**Figure 3.1 Schematic Relationship between Access and Movement Functions of Streets**

Secondly, I-35 is the major local pollutant causing noise and air pollution as well as an increased risk from HazMat. The City should foster a cooperative relationship with local TxDOT authorities to develop a strategy for minimizing pollutants. Lorena should also review the existing upper level evacuation plan for inclusion of hazardous spills along I-35 and the rail line.
Arterial Streets

There are two arterial streets within the city limits, East FM 2837 and West FM 2837. However, the road is split by I-35 resulting in complicated and dangerous intersections. Changing the directional flow of the frontage roads will help to alleviate some of the complexity, but a more radical change is needed at the West FM 2837 intersection. At that time, FM 2837 could be used as a collector supporting the expected land use.

Major Collectors

Major collectors (or minor arterials) are extremely important. Currently there are no major collectors in Lorena; therefore, the City should plan for their addition. This addition can come from improvement of existing collectors, and from construction of new roads. The following collectors are recommended for improvement:

- Williams Road
- Leopard Lane
- Pilgrim Lane
- Old Lorena Road
- Box Ranch Road
- Peabody Road
- Hatch Road
- County Route 120 B
- Mockingbird Lane
- Robin Road
- Old Bethany Road
- S. Old Temple Road

The following three connections are proposed for earliest consideration for construction: Williams Road with Old Lorena Road, Peabody Road with Telephone Road, and East FM 2837 with S. Old Lorena Road. Construction of a new road connecting Peabody Road and Telephone Road will create a third intersection with I-35. This intersection will increase connectivity between the southwestern area and southeastern area of Lorena, and support the I-35 Corridor District.

Additionally, the south intersection on I-35 also needs a radical reform considering the safety aspect when another new road connecting S. Old Lorena Road with East FM 2837 is constructed. Map B-3 shows one of the examples.
Collectors and Local Streets
As seen on Map B-3, all other streets in the city are collectors or local streets. There are also a few local or collector streets in the southern area of the proposed Creekside District. When this development begins to occur, the City should be proactive in working with developers to plan for efficient and safe streets that are complementary to the proposed pedestrian and bicycle trail system.

ROADWAY DESIGN STANDARDS
Generally, roadway design standards are based on the functional and operational characteristics of streets such as travel volume, capacity, operating speed, and safety. They are necessary to ensure that the system of streets will safely and efficiently serve the traveling public. Therefore, each class of roadways has its own standards, and the standards come from the following parameters: General Design Criteria for Each Type of Roadways, Design Speeds, and Cross Section Elements (Design Standards for Urban Streets).³

<table>
<thead>
<tr>
<th>Feature</th>
<th>Highway</th>
<th>Arterial</th>
<th>Collector and Local Street</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control of Access</td>
<td>Full</td>
<td>Usually none</td>
<td>None</td>
</tr>
<tr>
<td>Minor Cross Streets</td>
<td>Terminated</td>
<td>At grade</td>
<td>At grade</td>
</tr>
<tr>
<td>Major Cross Streets</td>
<td>Separated</td>
<td>At grade</td>
<td>At grade</td>
</tr>
<tr>
<td>Intersection Control</td>
<td>-</td>
<td>Stop signs or signals</td>
<td>None*</td>
</tr>
<tr>
<td>Private Driveways to Through Lanes</td>
<td>None</td>
<td>Restricted, some “right turn only”</td>
<td>Unrestricted</td>
</tr>
<tr>
<td>Access Connection Treatment</td>
<td>Ramps</td>
<td>Normal or flared</td>
<td>Normal</td>
</tr>
<tr>
<td>Frontage Roads</td>
<td>Where needed</td>
<td>Usually none</td>
<td>None</td>
</tr>
<tr>
<td>Median</td>
<td>Continuous</td>
<td>Where feasible</td>
<td>None^</td>
</tr>
<tr>
<td>Pedestrian Crossings</td>
<td>Separated</td>
<td>Crosswalks</td>
<td>Unmarked crosswalks</td>
</tr>
<tr>
<td>On Street Parking</td>
<td>None</td>
<td>Restricted or eliminated if necessary</td>
<td>Unrestricted</td>
</tr>
</tbody>
</table>

³ City of Lorena, Texas
Map B-4
Parks, Hike & Bike Trails

Legend

- Trails
- Hard Surface
- Natural Surface

- Parks
  - Community
  - Neighborhood

0.6  0  0.6  1.2 Miles

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Base Map Source:
City of Waco
Texas Target Cities Team
Table 3.3 Design Speeds

<table>
<thead>
<tr>
<th>Location</th>
<th>Highway</th>
<th>Arterial</th>
<th>Collector</th>
<th>Local</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Speed (mph)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>Flat</td>
<td>70</td>
<td>70</td>
<td>40-60</td>
</tr>
<tr>
<td></td>
<td>Rolling</td>
<td>60</td>
<td>60</td>
<td>30-50</td>
</tr>
<tr>
<td>Urban</td>
<td>As rural</td>
<td>40*-60</td>
<td>30</td>
<td>20-30</td>
</tr>
</tbody>
</table>

* -30 mph under special circumstances

Table 3.4 Cross Section Elements

<table>
<thead>
<tr>
<th>Design Elements</th>
<th>Major Arterial LDR*</th>
<th>Collector Other</th>
<th>Local LDR*</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of traffic lanes, ft</td>
<td>4-6</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Width of traffic lanes, ft</td>
<td>10-12</td>
<td>10-11</td>
<td>11</td>
<td>9-11</td>
</tr>
<tr>
<td>Width of turn lanes, ft</td>
<td>11</td>
<td>--</td>
<td>9-10</td>
<td>--</td>
</tr>
<tr>
<td>Width of parking lane, ft</td>
<td>10</td>
<td>7-8</td>
<td>10</td>
<td>7-8</td>
</tr>
<tr>
<td>Width of border area, ft</td>
<td>12</td>
<td>10</td>
<td>8</td>
<td>5-10</td>
</tr>
<tr>
<td>Width of median, ft</td>
<td>14-20</td>
<td>--</td>
<td>14-20</td>
<td>--</td>
</tr>
<tr>
<td>Width of right-of-way, ft</td>
<td>80-130</td>
<td>60</td>
<td>80</td>
<td>50-60</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>60-70</td>
</tr>
</tbody>
</table>

* LDR: Low-density residential area

TRAFFIC CONTROL

Although there is no signalized traffic control in the City of Lorena, based on the traffic volume forecasts and the transportation network plan, the following intersections may need to be signalized in the next 20 years:

- The two existing intersections on I-35
- Any future intersections on I-35
- The recommended intersection at West FM 2837/Williams Rd.

In addition, any proposed development or construction within the City Limits, which could create significant traffic volume, should be evaluated for its impact on traffic flow.
In addition, it should be noted that all of the proposed signal locations will need to meet standards established by the Manual of Uniform Traffic Control Devices (MUTCD), and be confirmed by a registered professional engineer.

**PEDESTRIAN AND BICYCLE NETWORK PLAN**

Accessibility of natural and community resources significantly impacts the quality of life for Lorena’s residents. In order to maximize accessibility of a future pedestrian and bicycle trail network the system should provide parking areas and access in neighborhoods.

**PEDESTRIAN NETWORK PLAN**

The most acceptable walking distance for most pedestrians is one-half mile. This means that each neighborhood could contain its own trail system. Care should be taken to connect these smaller systems as part of a larger citywide trail network. Each neighborhood pedestrian network should be designed to maximize the characteristics of the particular district or neighborhood it serves. For example, trails should be in harmony with Cow Bayou while providing accessibility for residents and visitors to the Creekside District. On the other hand the downtown area should be planned to increase commerce and shopping. All of these networks should intertwine with a bicycle trail network.

**BICYCLE NETWORK PLAN**

Because a bicycle network allows for longer trips than pedestrian traffic, it should also provide safety and convenience during the trips. Unlike a pedestrian network, it will need some infrastructure and amenities. Marked on-street bike lanes should be provided on all arterial streets and collectors, where the collector street directly connects major residential areas with schools or parks, or where it may be necessary to ensure safe bicycle travel. In addition all community facilities should incorporate bike paths for recreational cyclists that conform with the document entitled: *Design for Development of New Bicycle Facilities* by the American Association of State Highway and Transportation Officials (AASHTO). Of course, bicycle pathway signage should also conform to the
Manual on Uniform Traffic Control Devices. Map B-4 shows a suggested hike and bike trail system.

OTHER RELATED TRANSPORTATION COMPONENTS

The following additional transportation plan components are also recommended as part of the overall Comprehensive Plan.

Rail Transportation

As mentioned in the State of the City, because of the difficulty of rerouting the Union Pacific railroad, the line should be considered as a hazard and planned for accordingly.

Public Transportation Plan

Because of the relatively small size of Lorena, there has been no public transportation system within the city limits. Only two public transportation services, S311 and Title 3, are operated by Central Texas Senior Ministries Transit (CTSM), which is one of four subcontractors of the Heart of Texas Council of Governments (HOTCOG), to provide an alternate way to reach to Waco. As the city grows and expands, Lorena will need a regular public transit system. A route connecting the proposed Creekside and Olde Town could be a catalyst for developing a citywide system.

SECTION 4

Urban Infrastructure
Section 4
Urban Infrastructure

GOALS AND OBJECTIVES

Goal 1: Provide safe and reliable services, which meet the needs of all citizens.
   Objectives:
   - Establish schedules to provide, maintain, remedy, and improve existing City infrastructure services
   - Establish methods for monitoring and implementing City services

Goal 2: Provide reliable services at the lowest cost possible
   Objectives:
   - Annually review City utility policies and compare them to those of similar cities to ensure that utility costs are not increasing at an unreasonable rate
   - Consider the use of impact fees, service charges, and other methods of funding infrastructure.

Goal 3: Exceed state and federal standards in terms of required infrastructure service and capacity
   Objectives:
   - Survey current service capacity and project the future service demand
   - Define service capacity and establish a standard for adequate services
   - Establish methods and schedules to provide, maintain, and improve the City services
Goal 4: Provide safe, efficient sanitary sewer service to the City.

Objectives:
- Expand the wastewater treatment facility
- Continue environmentally friendly sludge disposal and seek ways to continually reduce the water percentage in the sludge
- Direct the Planning and Zoning Commission and the City Council to produce and implement a policy on the location and screening of lift stations

Goal 5: Provide a safe and efficient storm water management system to the citizens.

Objectives:
- Create and implement a storm water management plan
- Requiring all new developments to include storm sewers
- Require detention ponds for commercial and industrial areas

Goal 6: Ensure superior solid waste service to the City.

Objectives:
- Implement waste reduction, cost-effective reuse, and recycling programs
- Maintain a record for the landfill capacity of the Lacy Lakeview Landfill
- Develop a twenty-year plan for future waste disposal
- Establish hazardous waste and bulky waste disposal days at regular intervals.

Lorena Sewage Treatment Plant
INTRODUCTION

Infrastructure promotes sustainable development along with economic, residential, educational and recreational excellence. Effective planning for infrastructure empowers informed decision making, rather than crisis reaction.

WATER DEMAND PROJECTION FOR THE CITY OF LORENA

In accordance with the future development of Lorena, the City needs to expand its water supply capacity. In a survey conducted by the Target Cities Team, several citizens expressed concern about low levels of water pressure. This often is the result of low water levels. To avoid inadequate water service, the City should keep records about the population of the City and the required water demand from various population levels. Even with an adequate water supply, it might be difficult to ensure appropriate service without raising customers’ awareness of conservation. Therefore, the City needs to have campaigns and establish enforceable water use regulations to keep sound water service. While the quality of water that the City provides is generally considered good, many citizens think that it is too expensive. At this point, even though Lorena has good water quality, the City needs to cooperate with the Brazos River Authority to maintain and improve water quality and supply. Chart 4.1 shows the projected population increases and ensuing increase in water demand for Lorena. The demand units expressed below are Acre-feet per year. (An acre-foot is the standard used to measure water supply. It equals one acre of surface area of water, one foot deep, or 325,851 gallons.)

![Chart 4.1 Total Projected Water Demand for the City of Lorena](chart.png)
WASTE WATER SERVICE

In a survey conducted by the Target Cities Team, 80% of the respondents were very satisfied, satisfied, or had no opinion about wastewater service in Lorena. In order to maintain and improve this level of service, the Team recommends that Lorena keep pace with growth by monitoring development activity and expanding wastewater treatment capacity in step with this growth. The City is also encouraged to continue its dewatered sludge disposal policy and to seek ways to further reduce the amount of water left in its dewatered sludge. The lower the water content in the sludge, the less bulky it is, and, therefore, the less space it takes up in the landfill.

STORM WATER MANAGEMENT

As Lorena grows the City will need to implement a written storm sewer policy. This policy should require that all future development include storm water management systems.

SOLID WASTE SERVICE

Half of the respondents to the Target Cities survey said they were either satisfied or very satisfied with the current state of trash pickup. However, 40% of the respondents to the Target Cities survey said they were dissatisfied or very dissatisfied with the current recycling service. Thirty nine percent of the respondents said they had no opinion about recycling services. These percentages indicate (1) that people would like to have a recycling program implemented and (2) that a great number of people may be unaware of the benefits of recycling and could be persuaded to take part in a citywide recycling program. It is important that the city take steps to educate the public on the benefits of recycling. The City should also work with Waste Management, Inc. to establish an annual or semi-annual hazardous waste pick-up day and a monthly or bi-monthly bulky waste disposal day.

Lorena uses the Lacy Lakeview Municipal Landfill. Its remaining life span is eighteen years. The City should maintain a record of the landfill capacity. To use an existing resource efficiently, there needs to be appropriate policies and programs, such as waste
reduction campaigns and recycling programs. The following is an example of a slogan for a recycling campaign:

**The Benefits of Recycling**

- Recycling feels good.
- Recycling saves natural resources.
- Recycling saves energy.
- Recycling saves our environment.
- Recycling saves disposal capacity and costs.
- Recycling is good business.

**CONCLUSION**

In general, The City provides an adequate level of infrastructure services to citizens at this point; however, this situation will change with future development. To prevent negative repercussions, Lorena needs to plan to ensure adequate services in two directions. First, the City government, which is in charge of the promotion and protection of the health, safety, morals, and general welfare of the public has to endeavor to provide sound services. Second, the City has to encourage and support citizen activities. Despite having enough service capacity, it might be difficult to ensure appropriate service without the awareness of the customers. In sum, when there is cooperation between the municipal body and the citizens, there are usually healthy, desirable infrastructure services.

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1 The citizen survey by Target Cities Team, 2001.
SECTION 5

Housing
Section 5

Housing

GOALS AND OBJECTIVES

Goal 1: Meet the varied housing needs of the future population of Lorena

Objectives:
- Develop renovation and redevelopment of residential structures
- Establish density requirements in the I-35 Planned Corridor District and the Creekside District
- Annually evaluate housing needs based on changing demographics

Goal 2: Maintain the charm of Lorena

Objectives:
- Develop and enforce minimum standards for property maintenance
- Develop and enforce maintenance standards for vacant lots

Goal 3: Provide affordable housing

Objectives:
- Develop and implement teacher-next-door and policeman-next-door programs
- Offer bonuses for redevelopment and infill
Housing

INTRODUCTION

Housing is the dominant land use in Lorena occupying over 90% of the land. Housing is important, not only in its own right, but also because it strongly influences the size of the population and its balance of demographic factors, such as household size, age and income.

Single family homes comprise 90% of the residential market in Lorena. While this is a desirable distribution for Lorena, as the population grows the City should seek developers to construct luxury apartments and townhomes.

FUTURE HOUSING NEEDS

The following projections are based on 1990 U.S. Census data. Table 5.1 shows the projected housing units and the projected increase. As shown, the number of housing units needs to increase by approximately 240 units every ten years to keep pace with projected population increases.

<table>
<thead>
<tr>
<th>Year</th>
<th>1990</th>
<th>2000</th>
<th>2010</th>
<th>2020</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population Projection</td>
<td>1,158</td>
<td>1,889</td>
<td>2,612</td>
<td>3,304</td>
<td></td>
</tr>
<tr>
<td>Housing UnitProjection</td>
<td>394</td>
<td>642</td>
<td>888</td>
<td>1,124</td>
<td></td>
</tr>
<tr>
<td>Housing Units Increase</td>
<td>NA</td>
<td>248</td>
<td>246</td>
<td>236</td>
<td>730</td>
</tr>
</tbody>
</table>

Source: 1990 U.S. Census Data

Knowing the estimated increase in the housing supply allows for forecasting of how much additional land will be required to accommodate the growth. Projections for Lorena’s land needs are based on 5 single-family homes per acre. Density for multi-family housing is calculated at 12 units per acre. Lorena should maintain a balance of 90% single-family and 10% multi-family.

Tables 5.2 and 5.3 show newly required land area according to two options. The first, Table 5.2 proposes 100% detached single-family. Table 5.3 assumes a 10% multi-family
distribution. Neither scenario accounts for right of way, environmental suitability, parkland or open space.

Table 5.2 Newly Required Land Area (Acres) : All low density

<table>
<thead>
<tr>
<th>Year</th>
<th>1990</th>
<th>2000</th>
<th>2010</th>
<th>2020</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing Units Increase</td>
<td>NA</td>
<td>248</td>
<td>246</td>
<td>236</td>
<td>730</td>
</tr>
<tr>
<td>Newly Required Land Area</td>
<td>NA</td>
<td>49.6</td>
<td>49.2</td>
<td>47.2</td>
<td>146</td>
</tr>
</tbody>
</table>

Table 5.3 Newly Required Land Area (Acres) : 90% low density and 10% high density

<table>
<thead>
<tr>
<th>Year</th>
<th>1990</th>
<th>2000</th>
<th>2010</th>
<th>2020</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing Units Increase</td>
<td>NA</td>
<td>248</td>
<td>246</td>
<td>236</td>
<td>730</td>
</tr>
<tr>
<td>Newly Required Land Area</td>
<td>NA</td>
<td>46.7</td>
<td>46.3</td>
<td>46.4</td>
<td>132.6</td>
</tr>
</tbody>
</table>

**FUNDING SOURCE FOR HOUSING**

**Affordable Multiple-Family Housing**

The proposed luxury apartments in the I-35 Planned Corridor District could also provide the easiest, most practical way to introduce affordable housing to Lorena. This could be accomplished by requiring developers to provide a certain percentage of their multifamily development to mid- to low-income tenants. This could be encouraged by offering tax credits.

There are also loans and tax credits available to developers who are willing to provide affordable units within their projects. For example, the U.S. Department of Agriculture (USDA) administers the Rural Rental Housing Guaranteed Loan Program and the U.S. Treasury Department provides Low Income Housing Tax Credit through the Texas Department of Housing and Community Affairs (TDHCA). There is also similar funding available for the housing for the elderly through the Section 202 Supportive Housing grant program which is also a part of HUD. The City of Lorena should investigate these and similar programs offered by HUD and the TDHCA.
Affordable Single-Family Housing

USDA, HUD and the TDHCA also provide assistance with renovation and construction of affordable housing units for single-families. For example, the USDA offers loans and grants for home improvement, repair and ownership. Section 502 Rural Housing Loans are intended to assist very low to moderate recipients (including the elderly) obtain direct loans to buy, build, rehabilitate or improve their homes. Moreover, HUD provides funds through the TDHCA in order to supply decent affordable housing through the HOME Investment Partnership Program. The Texas Department on Aging provides funding to low-income seniors (age 60 and over) via the Residential Repair Program. This allows elderly persons to make repairs to their homes, which may otherwise be unaffordable.

Fannie Mae and Freddie Mac are federally administered programs that specialize in making home ownership accessible to moderate to low income families through special loan and mortgage programs. There are also voluntary organizations that can help. Habitat for Humanity is a non-profit organization that specializes in providing affordable housing to low-income families. There are several chapters of this group in Waco as well as in the Belton/Temple area that could be contacted to assist in Lorena.
SECTION 6

Community Facilities & Services
Section 6

Community Facilities and Services

GOALS AND OBJECTIVES

Goal 1: Provide a functional municipal government center

Objectives:
- Develop a twenty-year plan to accommodate the required upgrades in facility, staffing and equipment
- Bring all facilities into compliance with ADA Code

Goal 2: Continue to provide quality services for the community of Lorena

Objectives:
- Initiate a continuing education program for all City staff members.
- Develop a benchmark program to evaluate City facilities and services

Goal 3: Maintain the safe atmosphere of Lorena

Objectives:
- Increase the number of full-time police officers
- Purchase additional police vehicles
- Develop citizen crime prevention programs
- Continue to provide excellent training to all volunteers in the fire department
- Continue to provide first responder services by supporting 911 system.

Goal 4: Increase the level of health care services

Objectives:
- Assist Providence Clinic with expansion of facilities and services
Goal 5: Enhance recreational opportunities

Objectives:
- Improve McBrayer Park
- Create a park and recreation staff to maintain and plan a park recreation program
- Initiate recreational programs to encourage use of parks
- Provide easy and safe access to parks through hike and bike trails

Lorena City Hall

Volunteer Fire Department
INTRODUCTION

Lorena is a community with a proud history and a tremendous community spirit. Community facilities and services promote this civic pride while also providing amenities and necessary services to citizens. The City of Lorena has a tradition of commitment to quality that can only be enhanced by expanding services to citizens and visitors.

CITY GOVERNMENT

The Lorena City Hall has an appreciable lack of meeting and storage space. Although Lorena is not growing at a rapid pace, the City should plan to expand its facilities to serve a variety of civic services. Such a center should be readily accessible both physically and visually. Any site should be large enough to allow for future expansion. It should be noted that design teams from Texas A&M University have developed potential sites and designs for a municipal complex (these are included at the end of this document). There will also be a need for additional staffing and facilities expansion over a twenty-year period. These needs should be analyzed and included in a capital improvements plan. It is strongly encouraged that the plan includes provisions for staff and volunteer training and continuing education, as well as strategies for increasing services and amenities.

POLICE SERVICES

At present Lorena Police Department (LPD) is deficient in the number of officers employed per recommendations for optimum protection from the FBI. Table 6.1 shows that Lorena will need to increase its force to 9 by 2020.

<table>
<thead>
<tr>
<th>Year</th>
<th>Police Personnel (2.20)</th>
<th>Police Vehicles (0.60)</th>
<th>Police Facility (200 square feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>3.8</td>
<td>1.0</td>
<td>346</td>
</tr>
<tr>
<td>2010</td>
<td>5.4</td>
<td>1.5</td>
<td>487</td>
</tr>
<tr>
<td>2020</td>
<td>7.2</td>
<td>2.0</td>
<td>658</td>
</tr>
</tbody>
</table>

Along with staffing and equipment improvements the City should also plan to provide an improved facility for law enforcement. It is recommended that the Police Station locate in a future municipal complex.

Future growth in Lorena will increase the importance of crime prevention. Presently, LPD does not offer any special programs such as community outreach; therefore, it is recommended that a “Neighborhood Watch Program” be initiated. A safe environment is one of the most attractive things that the City can provide for potential businesses and residents. There are grants and programs available to the City.

**FIRE SERVICES**

At present, the Lorena Volunteer Fire Department (LVFD) protects the citizens of Lorena from fire and related hazards. Though it is common to have a volunteer fire department in towns with populations of less than 2,500, according to a National Fire Protection Association survey dependency on volunteers falls as the population increases. The City should plan to expand fire protection service incrementally as growth demands. Table 6.2 suggests that Lorena should have at least five paid firemen by 2020. The City also should ensure between 2.52 and 2.88 millions gallons of water per day for at least a seven hour time period by 2020.

<table>
<thead>
<tr>
<th>Year</th>
<th>Fire Personnel (1.65)</th>
<th>Fire Vehicles (2.00)</th>
<th>Fire Facility (250 square feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>2.9</td>
<td>3.5</td>
<td>433</td>
</tr>
<tr>
<td>2010</td>
<td>4.0</td>
<td>4.9</td>
<td>609</td>
</tr>
<tr>
<td>2020</td>
<td>5.4</td>
<td>6.6</td>
<td>823</td>
</tr>
</tbody>
</table>


It is recommended that the City locate a fire department in any new municipal complex. The presence of man-made barriers such as I-35 and the railroad can cause significant increase in response time in Lorena; therefore, the City should consider distributing facilities throughout neighborhoods to provide quick responses. To continue to provide a high level of fire protection and to prepare for all possible situations, the Fire Department should continue to train all firefighters and keep abreast of technological advances.
PUBLIC SCHOOLS

The Lorena Independent School District (LISD) system currently has assured enough facility needs for students. However, the LISD should continuously ensure that it meets the standards according to population growth.

HEALTH SERVICES

As medical care rapidly changes and progresses it is important that Lorena be able to offer quality medical services to its residents. The Providence Healthcare Clinic provides adequate service for Lorena. The most critical addition to this service is a 24-hour emergency facility. Based on future population projections, the population over age 60 and under age 4 is expected to grow rapidly over the next twenty years. Table 6.5 shows the level of health service required for growing populations.

<table>
<thead>
<tr>
<th>Year</th>
<th>Physicians (1.5)</th>
<th>Nurses (4.5)</th>
<th>Hospital beds (4.0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>2.6</td>
<td>7.8</td>
<td>6.9</td>
</tr>
<tr>
<td>2010</td>
<td>3.7</td>
<td>11.0</td>
<td>9.8</td>
</tr>
<tr>
<td>2020</td>
<td>4.9</td>
<td>14.8</td>
<td>13.2</td>
</tr>
</tbody>
</table>


PUBLIC PARKS AND RECREATION FACILITIES

The 1999 EDC Citizen Survey shows that 90% of Lorena residents are in support of developing and improving McBrayer Park. To plan and manage the existing park as well as future parks in Lorena, the City should create a parks and recreation committee.

According to the National Recreation and Park Association (NRPA) acreage standards Lorena is lacking in the amount of available community park space. (Table 6.4) Suggested locations for future parks are shown on Map B-4
Table 6.4 Neighborhood and Community Park Acreage Standard

<table>
<thead>
<tr>
<th>Year</th>
<th>Projected Population</th>
<th>Recommended Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>1,730</td>
<td>18.09 - 30.41</td>
</tr>
<tr>
<td>2010</td>
<td>2,437</td>
<td>25.49 - 42.84</td>
</tr>
<tr>
<td>2020</td>
<td>3,292</td>
<td>34.43 - 57.87</td>
</tr>
</tbody>
</table>


Along with providing enough open spaces to meet demand, providing adequate and needed amenities is also important. To create a truly enjoyable outdoor experience for all citizens in Lorena, the City should enhance accessibility and provide a safe atmosphere with lighting and signage.

CONCLUSION

The City should evaluate and monitor periodically to ensure adequate community facilities and services to the community. Each component indicated in this section is equally important to continue to produce and enhance the high standards of living for the citizens of Lorena.

Resources

For further information on the programs or information identified in this section, please contact the following sources.

Grants and funding in National Criminal Justice Reference Service.
National Criminal Justice Reference Service (NCJRS)
P.O. Box 6000
Rockville, MD 20849-6000
(800)851-3420 or (301)519-5500
askncjrs@ncjrs.org
www.ncjrs.org/fedgrant.html
Community Facilities and Services

Department of Justice, Office of Justice Programs Funding Opportunities
U.S. Department of Justice
950 Pennsylvania Avenue, NW
Washington, DC 20530-0001
AskDOJ@usdoj.gov
www.ojp.usdoj.gov/fundopps.htm

Department of Justice Community Support and Grants
U.S. Department of Justice
950 Pennsylvania Avenue, NW
Washington, DC 20530-0001
AskDOJ@usdoj.gov
www.usdoj.gov/08community/index.html

Volunteer Fire Assistance Program
James B. Hull
Texas Forest Service
301 Tarrow Dr., Suite 364
College Station, TX 77840-7896
(979)458-6600
jim-hull@tamu.edu
txforestservice.tamu.edu/fire_protection/fire_prevention/volunteer_fire_assistance_program.html

Fire Grant Program
(866)274-0960
usfagrants@fema.gov
www.usfa.fema.gov/grants/forms.htm

Community Facilities Grants and Loans
U.S. Department of Agriculture
Rural Development Administration
Community Facilities Division
14th and Independence Avenue, NW
Washington, DC 20250
(202)720-4323
www.rurdev.usda.gov/rhs/ProgramBriefs/brief_cp_grant.htm

Community Development Block Grants (CDBG)
Room 7282 451 Seventh St., SW
Washington, DC 20410
(202)708-1577
www.hud.gov/progdesc/cdbgent.html
State Domestic Preparedness Equipment Support Program
Office of Justice Programs
Department of Justice
810 7th Street, NW
Washington, DC 20531
(202)305-9887
www.ojp.usdoj.gov/osldps/factsheets/facts.htm

National Fire Academy Training Assistance
National Emergency Training Center
Educational and Technology Services Branch
16825 S. Seton Avenue
 Emmitsburg, MD 21727
(301)447-1000
www.usfa.fema.gov

The U.S. Department of Education
Office of the Chief Financial Officer
400 Maryland Avenue, SW
Washington, DC 20202
(202)401-0085
ocfoweb@ed.gov

Texas Education Agency
1701 North Congress Ave.
Austin, TX 78701-1494
(512)463-9734
sfinance@tea.state.tx.us
www.tea.state.tx.us/school.finance/
Rural Utilities Service (RUS) grant- funds projects through its Distance Learning and Tele-
medicine program:
mdaskal@rus.usda.gov
www.usda.gov/rus/dlt/dlml.htm

The program that is designed to donate surplus Federal computer equipment to schools
and educational nonprofits may be reached at:
www.computers.fed.gov/School/user.asp

Resource Guide to Federal Funding for Technology in Education:
www.ed.gov/Technology/tec-guid.html

Tech 2000 Program
Bryan Independent School District, Bryan, TX
(979)731-7350
www.bryanisd.org/secondlevel/academic/careered/index.htm
Community Facilities and Services

Hilton Hospitality Academy Program
Bryan Independent School District, Bryan, TX
(979)731-7350
www.bryanisd.org/secondlevel/about/specialprog/index.htm

Funding resources in U.S. National Library of Medicine
U.S. National Library of Medicine
8600 Rockville Pike, Bethesda, MD20894
(888)346-3656
custserv@nlm.nih.gov
www.nlm.nih.gov/research/funding.html

Rural Utilities Service (RUS) grant-funds projects through its Distance Learning and Telemedicine program
mdaskal@rus.usda.gov
www.usda.gov/rus/dlt/dltm.htm

U.S. Department of Health and Human Services (DHHS): www.hhs.gov/agencies/,
http://www.hhs.gov/grantsnet/

The U.S. Department of Health and Human Services
200 Independence Avenue, S.W.
Washington, D.C. 20201
(202)619-0257

Community Outdoor Outreach Program
Recreation Grants Branch
4200 Smith School Road, Austin, TX78744
(512)912-7145
www.tpwd.state.tx.us/park/admin/spout_prog/community.htm

Land and Water Conservation Fund
Wayne Strum, LWCF/UPARR grant office
National Park Service
(202)565-1129

Local Park Planning Assistance Program
Local Planning Assistance Program
4200 Smith School Road, Austin, TX78744
(512) 912-7127
Recreational Trails Program
Christopher Douwes, Recreational Trails Program Manager
Federal Highway Administration
(202)366-5013
Christopher.Douwes@fhwa.dot.gov

Statewide Planning and Research Program
(512)912-7132

Texas Recreation and Parks Account Grants
Recruitment Grants Branch
4200 Smith School Road, Austin, TX78744
(512)912-7124

Urban Park and Recreation Recovery Program
Midwest Regional Office, National Park Services
1709 Jackson Street, Omaha, NE68102-2571
(402)221-3358, 3292, 3205
www.ncrc.nps.gov/uparr
SECTION 7

Community Image
Section 7

Community Image

GOALS AND OBJECTIVES

Goal 1: Accentuate and optimize Lorena's presence along Interstate 35

Objectives:
- Request context sensitive design and roadway vegetation and berms for sound barriers as a part of the I-35 expansion project
- Provide unique, aesthetically pleasing, landscaped gateways along the I-35 corridor
- Create and implement minimal landscaping requirements for all development along the I-35 corridor
- Create and implement minimal signage standards for all development along I-35 corridor
- Create and implement a litter and weed control program utilizing volunteers and local merchants

Goal 2: Maintain and improve the "small town" image and safety of the City.

Objectives:
- Create and adopt ordinances establishing minimal requirements for signs and sign maintenance
- Create and adopt ordinances establishing minimal landscaping requirements for all new development throughout the City
- Create and implement a property maintenance code requiring minimum upkeep (e.g., weed and litter removal) of all properties in the City
- Landscape and maintain property owned by the municipality
- Screen all public works facilities (e.g., lift stations/pump stations, transformers, etc.) with appropriate landscaping
- Request that current utility, telephone and cable lines be placed underground
- Require that all future utility, telephone and cable lines be placed underground
- Create sidewalk systems in neighborhoods and special districts
- Install design-appropriate trash receptacles in the downtown area and other special districts and commercial areas
- Create special logo capturing the unique character of the City for use on gateway signs, street signs, municipal facilities, parks, lighting fixtures and the like
Goal 3: Encourage citizen involvement in and ownership of city beautification.

Objectives:
- Create citizen committees to address beautification needs and establish minimum standards for neighborhoods and special districts
- Create City beautification /clean-up programs utilizing community volunteers and local businesses
INTRODUCTION

The aesthetic appearance of a city is extremely important, impacting not only its residents but also any visitors and passersby. However, a community's image is more than a conglomerate of its various physical elements (e.g., buildings, roads, signs, landscape, etc.). It is the overall impression that is created by both tangible and intangible aspects of the natural and built environment. This section attempts to translate some of the intangible aspects that shape Lorena's community image into tangible, quantifiable objectives.

ENHANCEMENT AND BEAUTIFICATION OF INTERSTATE-35 CORRIDOR

Lorena's presence along I-35 leaves it easily exposed to the visual assessments of travelers and provides a brief indication of the physical quality of the entire City. Therefore, it is very important that the City promotes and maintains beautification initiatives in this area.

Highway Design and Roadside Vegetation

Lorena should identify and plan to capitalize on the increased traffic volume that will result from the expansion of I-35. City leaders and TxDOT should work together to ensure and promote context sensitive design – the goal of which is to preserve and enhance the human and natural environment surrounding highways. Context sensitive design is favored by transportation agencies and organizations in many states. The City should also request that berms and vegetation be used for roadside sound barriers along the highway, as opposed to walls. The City should initiate a plan to visually enhance I-35 and explore programs and grants to assist with this.

Gateways

Travelers along the I-35 corridor should not be allowed to pass through Lorena unaware of the community that lies beyond the highway. Unique, aesthetically pleasing signage and landscaping at the northern and southern boundaries of town would improve the visibility of the city and entice passersby to stop and explore. These gateways could also be designed to emphasize the small town character of Lorena as a 'village of specialty
shops'. Potential gateway locations are shown on Map B-5. A special logo capturing the unique character of Lorena could be designed for this purpose and repeated strategically throughout the City (e.g., on municipal structures and signs, street signs, lighting fixtures etc.).

**Signage and Landscaping**

The landscaping and signage used by development along I-35 also has the capacity to shape the image of Lorena. The City should create and implement standards for both and require that all development in the district comply. Such requirements will ensure consistent and compatible development of the caliber and image desired by the community. Signage regulations should address:

- Size  
- Maintenance requirements  
- Height  
- Off-premise signs  
- Location  
- Temporary signs  
- Lighting  
- Movement

Lorena should require that all obsolete, broken or illegible signs be removed or repaired at the owners’s expense. Signs should create a consistent image throughout Lorena. The City should develop an inventory of existing signs as well as a system for permitting all new and altered signs with strict requirements for temporary and off-premise signs.

Landscaping is also a unifying community feature. Any landscaping ordinance adopted by the City should include provisions for tree protection and conservation. The ordinance should also have minimum standards for all new development with phasing for improvements to existing properties.

**Litter and Weed Control**

Lorena does not currently have a conspicuous weed or litter problem along I-35. Care should be taken to ensure that this does not become a problem in the future by adopting and implementing a litter and weed control ordinance. Minimum maintenance standards
should be established, requiring all property owners to remove litter and weed on a regular basis. Moreover, landowners in this area should be encouraged to team up and promote a cleaner Lorena along the interstate and invite volunteer and civic groups to assist in this effort. There are currently several programs throughout the state from which Lorena could draw inspiration and information, a partial list of which is included at the end of this section.

INTERNAL IMAGE, BEAUTIFICATION AND SAFETY

Although visitors to Lorena may gain their initial impressions of the City from its presence along I-35, the internal image of the City beyond that area is just as important. Many citizens of Lorena enjoy the 'small town' image of their city and would like to preserve this. Establishing and maintaining aesthetically pleasing interiors throughout the City would promote not only civic pride but also entice businesses and developers to consider Lorena as a prospective location for future projects. Consequently, Lorena should create and implement minimal requirements for signage, landscaping and litter and weed control throughout the City as well as encourage the renovation of utilization of older structures.

Landscaping and Signage

Landscaping is an important part of a community's image. It can be used to enhance areas of interest as well as screen objects or structures that detract from the City's visual appeal. The City should lead by example and encourage residents and merchants to follow the same standards. Unsightly structures such as lift/pump stations and transmitters should be screened with attractive fencing and landscaping. Lorena should also adopt a landscaping ordinance requiring all new development throughout the City to include minimal amounts of greenery and fencing as needed to screen parking lots, trash dumpsters, and outdoor storage.

Lorena should also implement an ordinance regulating signage throughout the City. The size, color, construction material, placement and number of signs for each commercial, industrial or mixed-use area should be closely monitored. As a part of the signage
ordinance the City should require all signs to be repaired or removed at the expense of the owner if not properly maintained.

Litter and Weeds
Citizens and visitors alike should be encouraged to do their part to keep Lorena clean. The City should install design-appropriate trash receptacles in all commercial and public spaces with a schedule for regular emptying. Lorena should also initiate programs that encourage public awareness of the importance of a clean environment and facilitate citizen participation. This would be extremely important in special districts such as Olde Town district and Creekside. Implementing a comprehensive program to provide trash containers and trash pickup is highly recommended. As an example, the City of Denton’s “Keep Denton Beautiful (KDB)” program which is a directed by a citizens board with support from the City of Denton Parks & Recreation Department, has been a success to create a cleaner, more beautiful city through volunteerism and education.

Overhead Power Lines
The use of overhead power lines detracts from the visual appeal of the City. They are also a hazardous threat to public safety. Lorena should adopt an ordinance requiring that all future utility, telephone and cable lines be buried underground. Although potentially problematic, the City should also request that the current utility, telephone and cable lines be buried for the same reason. The City of Hidalgo, Texas, has been successful in this.

Sidewalks
The absence of sidewalks in Lorena prohibits safe pedestrian traffic. Lorena should renovate existing sidewalks and install new ones throughout the city as part of a trail network. This would greatly enhance Lorena’s ‘small town’ feeling by allowing citizens and visitors to safely walk through the community. Sidewalks should be required in all new development and should be in harmony with the proposed hike and bike trail system.
CITIZEN OWNERSHIP AND PARTICIPATION

The most valuable asset that Lorena has is its citizenry. The City should encourage the ownership of and participation in enhancement and beautification initiatives as a means of using this resource to the fullest. Lorena could recruit volunteers to form a beautification committee, which would organize a city wide clean-up campaign. Local businesses and residents could be asked to provide materials and funds. After an initial kick-off rally, different events could be held throughout the year to promote beautification in Lorena. For example, one weekend could be used to pick up litter and remove weeds throughout the City while another week or weekend could be used to clean up and paint older structures or install landscaping in public spaces. The City of Richardson, Texas has created a matching funds program for beautification to balance the costs between the citizens and the City. Smaller committees could be formed in individual neighborhoods and districts to establish minimal guidelines for regular maintenance.

ADDITIONAL PROGRAMS AND FUNDING SOURCES

For further information on the programs or information identified in this section, please contact the following sources.

Scenic America, Smart Growth and Scenic Stewardship
Strategies for Smart Growth and Scenic Stewardship
 Advocate for Context-Sensitive Highway Design
 www.scenic.org/growthstrat9.htm

Bonnie Harper
U.S. Department of Transportation, Federal Highway Administration
Roadside Vegetation Management Program
Phone: 651-291-6104
Fax: 651-291
www.fhwa.dot.gov/environment/veg_mgt.htm

Rob Borowski or Larissa Peter
Texas Natural Resource Conservation Commission
Small Business and Environmental Assistance Division MC112
P.O. Box 13087
Austin, TX 78711-3087
Phone: 512/239-3187
Fax: 512/239-3165
Community Image

E-mail: rbrowski@tnrcc.state.tx.us or lpeter@tnrcc.state.tx.us

Ken Roberts
Adopt-a-Highway District Coordinator, Waco
Phone: 254-867-2705
Fax: 254-867-2893
www.dontmesswithtexas.org/aah.htm

Joe Vera, III, City Manager
City of Hidalgo, Texas
Phone: (956) 843-2286
Fax: (956) 843-2317
www.hidalgotexas.com

City of Richardson, Texas
Parks and Recreation Department
411 W. Arapaho Rd.
Richardson, TX 75083-0309
Phone: 972-238-4250
www.cor.net/parks/matchfunds/homepage.html
SECTION

8

Economic Development
Economic Development

Section

8

Economic Development

GOALS AND OBJECTIVES

Goal One: Capitalize on Lorena’s historic charm, natural resources, and beauty to generate tourism revenues.

Objectives:
- Establish specialty districts.
- Adopt regulations to promote the high quality mixed use development of the proposed Creekside District in southeast Lorena.
- Maintain the historic integrity of downtown Lorena through the use of development regulations and other tools.
- Recruit and establish a hotel, motel, or bed and breakfast in Lorena.

Goal Two: Create a “Business Park” to attract and house businesses brought to Lorena.

Objectives:
- Zone for and develop a technology park site.
- Develop financial incentives to attract manufacturing and other types of business to Lorena.
- Create a recruitment strategy and marketing campaign to attract new businesses to Lorena.
- Create and implement a business retention plan to assist businesses already in Lorena.
- Analyze the feasibility of the establishment of a business incubator to promote small business development in Lorena.
- Recruit environmentally responsible businesses and industry.
Goal Three: Capitalize on proximity to Interstate 35.

Objectives:
- Implement the Land Use Plan for the I-35 Corridor as outlined in the Comprehensive Plan using an appropriate Zoning Ordinance.
- Use the development of the I-35 Corridor to produce a positive outward image of the city for both those traveling through and those who may locate businesses within Lorena.
- Use the I-35 Corridor as an aesthetically pleasing gateway to the city
- Establish signage and landscape regulations along the I-35 corridor to ensure an attractive outward appearance.

Goal Four: Promote regional collaboration on economic development projects.

Objectives:
- Create an umbrella organization connecting the economic development efforts of Lorena with those of the surrounding communities.
- Identify potentially advantageous industrial and business synergies in the Waco - Temple - Killeen Area and throughout Central Texas.
- Look at tourism opportunities and synergies in the Waco - Temple - Killeen Area and throughout Central Texas.

Goal Five: Promote Workforce Education training to ensure Lorena’s workforce is as competitive as possible.

Objectives:
- Establish workforce-training agreements with Texas State Technical College and/or McLennan Community College.
- Utilize McLennan Community College Small Business Development Center to promote economic development efforts.
Goal Six: Promote the creation of community and/or regional festivals that both enrich community life and draw in additional tax revenues.

Objectives:
- Create a festival "strategic plan" outlining festivals, occurring ideally six times a year, to augment the already existing Bluebonnet Festival and Harvest Festival.
- Tie in festivals and related revenues to finance the development, management, and continual maintenance of community and economic development projects.
INTRODUCTION

Economic Development, in the context of this plan, refers to the active creation of increased local job opportunities and a broadened municipal tax base by local government and City officials and the EDC. Job opportunities are important to any community. The 1999 EDC Survey revealed that 80% of Lorena's residents are in favor of attracting more employment to the community and 26% of the respondents are in support of light industry. In addition, increased tax revenues are crucial for the City in order for them to be able to provide quality city services. Economic Development is about attracting new business and industry while also working to retain and expand existing businesses. Office parks and other business-related facilities, when coupled with financial incentives can attract business and industry. Festival and special events are also good stimulants for the local economy. These are but a few of the economic development strategies available to Lorena.

In 1995, the McLennan Community College Small Business Development Center and the Texas Engineering Extension Service (TEEX) of Texas A&M University collaborated to create An Economic Development Plan for The Golden Triangle, for the Cities of Hewitt, McGregor, and Lorena. The recommended course of action for Lorena centered on the attraction and creation of warehouse, distribution, and assembly facilities in the city. In addition to this recommendation, the City was urged to update its I-35 billboards in order to attract shoppers and tourists to the antique shops in downtown Lorena.

The following economic development recommendations use the TEEX document as a starting point. However, it should be noted that this effort focuses on attracting shoppers and tourists to the City in addition to business and industry, unlike the TEEX document. The following economic development strategies are meant to lay the foundation for a possible future economic development plan that should be created. The careful development and utilization of such a plan will go much further to develop Lorena's economy and tax base than merely following the suggestions outlined in this document.
ECONOMIC DEVELOPMENT STRATEGIES

Tourism
Lorena’s antique-filled downtown of restored historic homes and shops offer a unique opportunity for attracting specialized and varied businesses. Set among beautiful rolling hills and riparian areas Lorena could be an attractive regional tourist destination. The City government as well as the citizens of Lorena should take several steps to ensure that these areas are used as effectively as possible.

The historic integrity of downtown Lorena should be maintained and capitalized upon. In order to protect this resource, the City should adopt an ordinance establishing the Olde Town District. A second specialty district, Creekside, should also be established around the riparian area southwest of Lorena. Although the area is currently not developed, careful, planned development of the area could create a unique area of shops, restaurants, and other tourist attracting establishments surrounded by the natural beauty of the creek and surrounding forests. Map B-6 shows these districts.

Full utilization of the Olde Town and Creekside areas for tourism and retail will require the cooperation of many different parties and a detailed course of action. A simple and effective course of action for economic development is the ‘Main Street Approach’. This four-step approach is appropriate for downtown revitalization as well as new development. The four steps are:

1. Organization – use existing organizations, involve City, business, civic, and financial representatives in economic development initiatives.
2. Promotion – improve advertising, sales promotions, and special events that generate interest
3. Design – capitalize on what is unique about Lorena (Creekside, proximity to I-35, historic character) and repeat this theme in building design and streetscaping
4. Economic Restructuring – create a healthy and attractive mix of goods and services by retaining existing businesses and recruiting new ones
Financial incentives should only be offered if they are needed and wanted and should only be granted (in the first phases) to projects with high visibility. Matching grants and tax incentives are a good way to attract business without a tremendous outlay of capital.

Lorena should lobby for a hotel or motel in the I-35 District and for bed and breakfasts in Olde Town. This would offer lodging for both those who come to visit the aforementioned specialty districts and those visiting Waco and the surrounding areas.

Finally, Lorena should look to utilize all of the available resources to attract tourism to the City. The former middle school building could be remodeled into a special events center complete with dormitories. Such a facility would attract groups and conventions to the city. These people would then spend money in Lorena's stores and restaurants, boosting the City’s economy.

The following is a list of potential sources for generating tourism revenue:

- Establish an ‘artist in residence program’
- Art galleries for local artists or students
- Equestrian shows and rodeos
- Corporate retreat
- Golf course
- Music camps for gifted children and adults
- Events facilities
- Gourmet dining, bistros, Epicurean shopping

Business Park

A Business Park should be developed in order to attract businesses to Lorena. Like many small communities, Lorena does not have many office, manufacturing, or distribution facilities. There are very few buildings immediately available for occupancy by new or expanding businesses. The proposed Manufacturing District should be created and an appropriate land use ordinance adopted. This area is the ideal site for such a facility not
only because of the access to I-35 and the rail line, but it will soon be the home of Davis Iron Works, which is moving into the community from Hewitt, Texas.

To promote the Business Park a program of financial incentives should be implemented to attract light manufacturing and other types of businesses to Lorena. These could include the contribution of land or other facilities to new or expanding businesses as well as tax incentives. Such programs and their funding are described in a report from the Texas State Attorney General’s Office entitled: *The Economic Development Handbook for Texas Cities, Volumes One and Two.*

Additionally, the possibility of the establishment of a business incubator should be analyzed. Business incubators are used to help small businesses by providing management, guidance, financing training, business planning, technical assistance, and marketing help. Many incubators establish a central location to share resources, such as copying machines, secretaries, fax machines, etc. This helps to cut costs for businesses that are just starting. There are normally time limits placed on participation in the incubator that allow the business to become establishing before having to bear all of its costs.

In order to maximize the effectiveness of financial incentives, a recruitment strategy and marketing campaign should be designed and implemented. Finally, in order to create the best environment for the citizens of Lorena, only businesses that are environmentally responsible should be sought for the City.

**Interstate - 35 Corridor**

Attractive, quality development as opposed to stereotypical suburban sprawl along the interstate will distinguish Lorena from other communities. In addition, this corridor should be developed as an attractive gateway to the city. The City should work with the EDC to attract business and development to the I-35 Planned Corridor District.
Map B-6
Economic Development Areas

Legend

Economic Development

- Creek Side
- I-35
- Manufacturing
- Olde Town

0.5 0 0.5 1 Miles

TEXAS TARGET CITIES PROGRAM
Department of Landscape Architecture & Urban Planning
College of Architecture
Texas A&M University
2000

Base Map Source:
City of Waco
Texas Target Cities Team
Regional Collaboration on Economic Development Projects

The effectiveness of economic development efforts is greatly increased when a regional approach is taken. The following strategies should be evaluated to work towards a regional approach to economic development.

An umbrella organization should be instituted made up of officials from Cities throughout the Southern Waco area. This organization and the ensuing exchange of information would work to connect the economic development efforts of Lorena with those of surrounding communities. Such an organization could also work to market the region collaboratively, thereby off-setting the burden of cost for all of the communities.

Lorena’s officials should identify potentially advantageous industrial and business synergies between businesses in Lorena and others in the Centro-Plex and throughout Central Texas. Lorena should identify industries in Central Texas within an appropriate proximity to I-35 for supply and distribution linkages, particularly food and agricultural distribution. Additionally, officials should identify linkages with the abundance of healthcare facilities in surrounding communities such as Scott and White in Temple. Synergies should not only be sought for business and industry. Lorena should look to the Centro-Plex region as a customer base for future tourism, retail, and specialty district development. The cities of Waco, Temple, and Killeen and surrounding communities have large, diverse, and affluent populations that could easily support Lorena’s specialty districts.

Finally, Lorena should consider regional transportation and traffic patterns in growth and development plans. Determining central linkages with other communities in the region, including secondary routes in addition to I-35 is crucial to economic development in the region.
Workforce Development
In achieving the goals of this strategy, Lorena should utilize the educational resources of the surrounding communities. The City should look to establish workforce-training agreements with Texas State Technical College and McLennan Community College, both of which are in Waco. Such agreements should focus on the specialized skills that may be required by the specific employers attracted to Lorena. Finally, one specific program that should be utilized is the McLennan Community College Small Business Development Center. The Center could be used for training opportunities or also for assistance with the aforementioned business incubator. Another possible use for the former middle school facility on Borden Street could be a workforce development and training center.

Festivals and Events
A strategic plan for festival and events to augment the Bluebonnet Festival and Harvest Festival should be developed. Ultimately the City should have at least six festivals or special events per year. The importance of marketing these events cannot be stressed enough. Following are just a few examples for special events:

- Antique Car Show
- Craft Antique Fair
- History Tour
- Polka Fest
- Choral Contest
- Acoustic Guitar Contest
- Festival of Texas Music
- Summer Theater (in the park or old church)
- Sports Complex for Minor League Sports (Evans Field)
- Food Cook-off: Beans, Watermelon, Chili, etc
- Christmas Trees Decorating Festival

The tax revenues from such festivals should be used to finance the development, management, and continual maintenance of community and economic development projects.
ECONOMIC DEVELOPMENT RESOURCES

Lorena Economic Development Corporation and Current Funding Sources

Lorena has a 4B Sales tax in place to promote and fund economic development activities. Revenues from this tax are used primarily to fund the efforts of the Lorena Economic Development Corporation. This organization will continue to play a leading role in the development of Lorena's economy. The organization should also take a leading role in forging the necessary relationships in order to facilitate a more regional approach to economic development.

The City of Lorena

The City should publish an annual report of its facilities and services, and annual development history. This report is both a quick reference tool for the City but can also serve as part of a marketing packet for potential businesses.

CONCLUSION

The economic development strategies presented in this portion of the comprehensive plan offer a variety of methods for maintaining and improving the economy of Lorena. There are countless other economic development strategies that may be employed by Lorena. All of the mentioned strategies could be incorporated in a Web Site produced by the City of Lorena or the Lorena Economic Development Corporation. These strategies should not be construed as an economic development plan. They should be viewed as the starting point for a comprehensive economic development planning initiative. Such a plan should be a detailed guide for the development of Lorena's economy. It is recommended that an economic development plan have a five-year time frame. This review should be based on the plan's detailed action agenda and changes that have occurred. A detailed plan such as the one proposed will lay a solid groundwork for future economic development initiatives.
ADDITIONAL PROGRAMS AND FUNDING SOURCES

The Federal and State Governments offer a wide variety of programs and funding sources to assist municipalities with their economic development initiatives. The following list outlines several such programs along with their individual web sites.

- Texas Department of Economic Development
  1700 North Congress Austin, Texas 78701
  P. O. Box 12728, Austin, Texas 78711-2728
  Phone: 512.935.0101
  Fax: 512.936.0440
  http://www.tded.state.tx.us/

- State of Texas Attorney General's Office
  300 W. 15th Street, Austin, Texas 78701
  P.O. Box 12548, Austin, TX 78711-2548
  Phone: 512.463.2100
  Fax: 512.463.2063
  http://www.oag.state.tx.us

- State Grants Team - Office of the Governor, Rick Perry
  1100 San Jacinto Blvd, Suite 151B Austin TX 78701
  PO Box 12428, Austin, TX 78711-2428
  Phone: 512.463.2000
  Fax: 512.463.1849
  http://www.governor.state.tx.us/grants/index.html

- Texas Department of Agriculture - Economic Development and Finance
  S.F. Austin Building, Rm 912
  1700 N. Congress Ave., Austin, TX. 78701
  PO Box 12847, Austin, TX 78711
  Phone: 512.463.7476
  Fax: 512.463.1104
  www.agr.state.tx.us/ecco/index.html

- Texas Rural Development Council
  8140 Burnet Road Suite 218, Austin, TX 78757-7799
  Phone: 512.323.6515
  FAX 512.323.6526
  www.trdc.org

- Texas Historical Commission - Main Street Program
  1511 N. Colorado Street, Austin, TX 78701
  P.O. Box 12276, Austin, TX 78711-2276
  Phone: 512.463.6100
  Fax: 512.475.4872
http://www.thc.state.tx.us/Main_Street/mainst.html

- Texas Engineering Extension Service
  Technology and Economic Development
  Texas A&M University System
  College Station, TX 77843-8000
  Phone: 979-845-2907
  Fax: 979-845-3559
  http://teexweb.tamu.edu/

- United States Department of Agriculture
  Rural Development Texas
  101 South Main Street, Suite 102
  Temple, TX 76501
  Phone: (254) 742-9700
  Fax: (254) 742-9709

- United States Department of Commerce
  Economic Development Administration
  http://www.doc.gov/eda/

- Council for Urban Economic Development
  http://www.cued.org

- American Economic Development Council
  http://www.aedc.org
SECTION 9

Action Agenda
Action Agenda

**Year One**

- Adopt the Comprehensive Plan
- Adopt a land use ordinance which also regulates signage, landscaping and parking
- Adopt an ordinance creating the I-35 Planned Corridor District
- Adopt an ordinance creating the Olde Town District
- Adopt an ordinance establishing the Manufacturing District and Business Park
- Adopt an ordinance requiring manufactured houses and subdivisions to meet single-family residential standards
- Develop a clean-up, fix-up, paint-up campaign plan
- Apply to become a Certified Local Government

**Year Two**

- Review the feasibility of proposed annexation and begin the first phase
- Develop incentives for infill development and rehabilitation
- Use financial incentives to recruit new businesses to the business park
- Review infrastructure capacity and plan facilities expansion for future population growth
- Develop a marketing campaign to attract business to Lorena
- Begin fundraising to improve and upgrade McBrayer Park
- Revise Subdivision Regulations
- Begin fundraising for a new Municipal Complex
- Adopt Design Review Guidelines for Olde Town
YEAR THREE

- Establish workforce training programs with McLennan Community College and Texas State Technical College
- Recruit hotels and retail establishments to the I-35 Planned Corridor District
- Begin construction on a hike and bike trail network
- Establish a mulching and composting program
- Work with TxDOT to change the traffic flow of the frontage roads from two-way to one-way
- Continue phased annexation based on demand and financial feasibility
- Plan to construct temporary gateways on I-35 during construction to be replaced by permanent facilities after completion of the expansion through Lorena

YEAR FOUR

- Establish a Parks and Recreation Department
- Survey road conditions and identify those in need of repair, maintenance, or expansion
- Adopt an Economic Development Plan
- Create the Creekside District
- Adopt a Storm Water Management Plan

YEAR FIVE

- Lobby TxDOT for a third intersection with I-35
- Locate all future utility lines below ground
- Establish a business incubator
- Begin a continuing education program for City staff
- Adopt a water conservation plan
MASTER PLAN FOR DOWNTOWN REVITALIZATION
The town of Lorena was named after Lorena Westbrook Robertson, eldest daughter of one of the founding families of Lorena.

Missouri-Kansas & Texas Railroad station in Lorena, 1910. This railroad station is marked in red on the map at the right.

Historic map of the layout of the stores and restaurants in the Lorena Business District.

Southwest view of Center Street, 1917 at Christmas. Santa arrived from the top of one of the utility poles. At the left you can see the Lorena Hardware and Lumber Company.

Source of this photograph: Lorena Women's Club. 

East view of Center Street, 1885. Three grocery stores can be seen perpendicular to Center Street. Many businesses faced the railroad at this time. A hardware store and a restaurant are located on Center Street in this photo.

Northeast view of Center Street, 1900. Wagons and buggies line the street.

During the 20's this building housed Bowman's grocery.

This site housed the Lorena Newspaper in the 1920's.

Lorena State Bank, circa 1920.

Maxey's Barber Shop, circa 1920.

In the 1920's this building housed Piper's Meat Market. It is presently used as a church.

This building was built around 1900 and was first used as a mercantile. Subsequent uses included a theater and

Logan Drug Store, 1969. This building has been torn down and is now used as a pocket park on Center.

The photograph above was taken around 1969 when Pace Grocery and the I.O.O.F. Lodge occupied this building. It was built in 1910 and was originally the Lorena State Bank. Subsequent uses include a post office, from 1923-1968, a clock shop, and a dress shop. It is presently an antique and gift shop, just for you.

All buildings are of the small town Texas vernacular mercantile style.


NOTE: All dates are approximations. Most photographs were taken in the late 60's.

Photo Source: Bruce Bowman, Owner, The Village Lamp Lighter

First National Bank of Lorena was built in 1906 and closed in 1933. It is the only commercial building on Center that remains in its original state.

Atkinson's Hardware, 1969.

The original building of The Village Lamplighter, built in 1964. Previously this site was used as a bakery and Bowman Overland Autos. To the left of this building was an open air picture show.

Originally this building housed a grocery store on the 1st floor and a Masonic Lodge on the 2nd floor. It was built in 1889, possibly the oldest standing building on Center Street.

This is the remnant of the Ford Motor Company car dealership.
The bustling Ford dealership in 1917 (right) was abandoned by the late 60’s (above). Today, a Victorian-style house sits on the site (above left).

Legend
Numbers beside the photos correspond to the building numbers on the map at the right.

The interior of the post office in 1919 (above). The exterior has remained essentially the same since it was built in 1906. A photograph of the post office in the late 60’s (right) and how it looks today (below left).

Lorena Drug Store, 1922. This drug store is located on the site of the present City Hall.

McAdams Grocery Store, 1925 (above) became Logan Drug in the 60’s (right). Today, it is a pocket park (below right).

1. Southwest view, railroad right-of-way. This area could be used for overflow parking during festivals and other town events.

2. West view, Center Street. Trains pass through Lorena on a daily basis.

3. This specialty shop, Just For You, is one of the viable businesses in downtown Lorena and specializes in antiques and fine furniture.

4. This is just one example of Victorian architecture in Lorena. This style can be seen throughout the town on houses as well as commercial buildings on Center Street.

5. East view from railroad, Center Street. Pecans can be seen in the center of the photo. PLAN 661 has recommended that the power lines be placed underground.

6. West view, Center Street. This clock has been in this location (in front of City Hall) for only 3 years.
1. West view, Center Street. The tall pecan trees in the center of the photo provide a nice arch over Center Street into the downtown.

2. East view, Center Street. This is a gateway into Olde Town from the west side of Lorena. As one approaches the downtown, a creek and the city park are passed.

3. North view, Bordon Street. This gateway provides main access to Olde Town for those coming from the north.

4. North view, Bordon Street. This gateway provides the main access through Lorena and is used by those coming from the south to Center Street.

5. East view, I-35 frontage road taken from Center Street. I-35 is below grade. Residential areas lie beyond the freeway. This is a main entrance to downtown Lorena.

6. Northeast view, Center Street. Detail of the pecan trees. Eight pecans line the north side of Center Street; five line the south side. With proper care and an improvement in pruning techniques, the pecans could form a magnificent arch over Center Street.
South view, Milley Alley, between Castro and Center. A limited amount of vehicular traffic uses this part of the alley. Residential garage access is the main usage.

North view, Milley Alley, between Center and Castro. This part of the alley is used by the owners of the two shops on either side of it so that they can access their garages. Garbage and shipment trucks also use this part of the alley.

North view, Milley Alley, between Center and Dawson. A limited amount of vehicular traffic uses this part of the alley. Residential garage access is the main usage.

South view, Milley Alley, between Dawson and Betties. The alley quickly becomes a vegetative swale.

West view, alley behind City Hall, parallel to Center Street. This space is being used only for additional parking at this time. If the City Hall does not expand onto this site, the pocket park could be expanded into this space.
The City Hall and fire station, public buildings, are presently located on Center Street.

Most of the land along Center Street is privately owned, whether the parcels are residences or shops, or in some cases, both.

There are two churches located on Center Street, the Promise Church in the central part of downtown, and First Baptist Church along I-35. These structures are considered semi-public buildings.
INTRODUCTION

Undergraduate and graduate students enrolled in Architecture classes 406 and 606 were responsible for this section of the Plan. These classes were conducted under the direction of Professor David Ekroth, AIA. The students worked on designs for a municipal government complex.

The undergraduate class (Architecture 406) worked on designs for the construction of a new complex at the existing City Hall site at the intersection of Center and Borden Streets. The students involved in this project included the following:

Paul Bubel
Amber Carroll
Hobart Chan
Edward Citzler
Matthew Davis
Christopher Elam
Miguel Erroz
Jathan Floren
Eduardo Garcia
Mario Garza
Megan McAfee
James Menefee
Aaron Molkentine
Lucian Nesline
David Polkinghorn
Brandon Renfrow
Bo Steinert
James Treichler

The graduate students (Architecture 606) worked on designs for a new complex at the site of the old middle school on Borden Street. The students participating in this effort were:

Byron Chambers
Dolratee Chootimun
Jeffrey Dinger
Andrew Garst
Lydia Kim
Nan Li
Meenal Singh
Joseph Slicker
Parul Vyas
Edward Citzler

DESIGN CONCEPT: Use old design forms and new materials. Texas is full of rich regional architecture and so is Lorena (and the surrounding area). This does not mean that new and useful materials should be overlooked. Instead of diverging from the past, throwing caution to the wind, and not designing for the people of Lorena, I will use the architecture of the past to highlight the prominent corner of Lorena’s main street. Materials can be used in architecture without giving up aesthetic form (as shown in stair and overhang).
Jathan Floren

DESIGN CONCEPTS: Civic architecture is planned and designed to make a statement. Civic design should incorporate solemnity, dignity, integrity, orderliness, and a definite civic presence. The structure should leave an impression of strict, formal, and orderly conduct. The significance of Lorena’s history and the history of law and order should play a role in civic design. The building’s reason for being is to provide a place where justice is administered and affirmed and this must be evident and legible in the architecture. It should reflect upon all citizens, from all cultures and backgrounds, a human attempt to bring justice to everyone.

Use a variety of smaller building units that are clustered together to symbolize and fit the historical streetscape. Create a separation between these units with contrasts in height, depth, material, and volume. Contrasting the solid and transparent forms can create an appealing façade. These contrasts in the street façade express the existing buildings around. The corner should have a powerful scale while diminishing to the adjacent existing buildings size. Use different building depths to draw the eye towards the buildings façade. Recess or project out the buildings entrances.
Eduardo Garcia

DESIGN CONCEPT: My project started out trying to emulate the surrounding cityscape of Lorena, yet program considerations and the needs of the public shaped it into what it ultimately became. Perhaps it was not a very traditional solution or approach, but it did address the major concerns and issues for the city of Lorena.

The building consists of four main areas, and each one served a different function. The south side of the building housed the courtroom and city clerks. The mid portion served clerical functions. The north portion of the structure, housed the police station. On the second floor were the offices for city administration.

The main entries lie on the southeast corner of the building. The corner element serves as a source for natural light, and as a point of interest to those who pass by. The northeast façade is differentiated from the rest of the structure, thus the distinct function housed within will become more evident. The same idea is carried over to the south façade, where masonry dictates the distinction between the courtroom and the other spaces. This was also done to preserve the continuity of the cityscape, thus to try to avoid a building that seems terribly out of proportion and scale.
Mario Garza

DESIGN CONCEPT: The two factors driving my design were the small project site and the fact that Lorena is a typical north Texas small town. As a result I chose to blend the aesthetics of the city hall with those of the surrounding buildings. The height of my building was kept to two stories. The doors and windows were kept to the same scale as the other buildings. The city hall building was broken into three parts, 1: administration and clerical, 2: court/council chambers, and 3: police department, in plan as well as elevation to prevent the large building from visually over powering neighboring buildings. The wall finishes consisted of standard brick used in various bond patterns and Indiana limestone cladding for accents. The building form took on a rectangular shape similar to surrounding buildings and details found on other buildings in the downtown area such as pediments and flat roofs were replicated in my design. All of these factors contributed to a clean and simple design that enabled my design to blend into the downtown area.
Clint Menefee

DESIGN CONCEPT: The goal of this project is to increase the amount of pedestrian traffic along the downtown area. The building itself embraces this traffic. The deep canopies provide shelter from the elements, and the courtyard, which separates the complex, gestures an invitation. This invitation is for the public to enjoy this space, and other areas in downtown Lorena. The interior circulation is simple and efficient. The second level balcony, which serves the administration gives the interior the same pedestrian feel as the exterior. This is a public center that is designed to serve the citizens of Lorena.
Lucian Nesline

DESIGN CONCEPT: Issues: Street corner has direct sunlight that needs to be dealt with. Potential for new use someday. Main Street needs landscaping such as trees, greenery, and benches. Architecture must appear secure and prosperous.

Solutions: Deploy transparent and solid volumes to distinguish as a public building. Incorporate overhangs and louvers to block direct sunlight. Provide a small landscaped plaza as a civic forecourt.

Methods: I will use idea of multiple volumes rather than a monolithic structure from Perkins and Will, to portray the public openness of the building. Perkins and Will use of unique stairways will be mimicked in the lobby area. Punched windows will be used.
David Polkinghorn

DESIGN CONCEPT: Design challenges for this new municipal building in Lorena, Texas, included a compact site, diverse program, utilizing the corner lot, and respecting the history and people of the town. This design focuses on matters of accessibility, being that it is a public building. Therefore, wayfinding for first time visitors was very important. Creating a cost-effective solution by implementing an efficient circulation system also drove this design.
Aaron Molkentine

East Elevation

South Elevation
Graduate Student Designs
Dolratree Chootimun
- allow every room in the building the ability to have natural light
- try to use the existing buildings wherever possible
- do not remove any of the existing trees