

# City of Plano

## COMPREHENSIVE PLAN

### UTILITIES ELEMENT

#### TABLE OF CONTENTS

|   |             |
|---|-------------|
| <b>PURPOSE</b>  | <b>10-1</b> |
| <hr/>   |             |
| <b>MAJOR THEMES</b>                                     | <b>10-1</b> |
| Theme I – Livable City                                  | 10-1        |
| Theme II – City of Organized Development                | 10-1        |
| Theme III – City in Transition                          | 10-1        |
| Theme I – Livable City                                  | 10-2        |
| Utility Services  | 10-2        |
| Utility Rates   | 10-2        |
| Objectives for Theme I – Livable City                   | 10-3        |
| Strategies for Theme I – Livable City                   | 10-3        |
| Theme II – City of Organized Development                | 10-3        |
| Utility Service Providers                               | 10-3        |
| Water Conservation                                      | 10-3        |
| Infrastructure Maintenance and Replacement              | 10-4        |
| Private Utilities                                       | 10-4        |
| Objectives for Theme II – City of Organized Development | 10-5        |
| Strategies for Theme II – City of Organized Development | 10-5        |
| Theme III – City in Transition                          | 10-5        |
| Changing Development Trends                             | 10-5        |
| Impact Fees   | 10-5        |
| Long Range Water Supply Plans                           | 10-6        |
| Storm Water Management                                  | 10-7        |
| Erosion Control   | 10-7        |
| Private Utility Trends                                  | 10-8        |
| Energy Resources  | 10-8        |
| Objectives for Theme III – City in Transition           | 10-9        |
| Strategies for Theme III – City in Transition           | 10-9        |

#### **TABLES**

|  |      |
|--|------|
| Table 1 – Water and Sewer Rates for Selected Metroplex Cities, 2005-2006 Fiscal Year | 10-2 |
|--|------|



*Retention pond serving as a lake at Bob Woodruff Park*

## Comprehensive Plan Utilities Element

### Purpose

The Utilities Element guides decision making regarding issues related to utility services and infrastructure. The element identifies the key factors, trends and issues affecting utilities and establishes objectives and strategies to address them.

### Major Themes

#### Theme I – Livable City

“Livable City” focuses on the importance of access and safety of utilities such as water, sewer, communications and electricity that enhance the quality of life of the Plano residents. These services may sometimes be taken for granted and noticed only when they are lacking, but they are a necessary part of our daily lives.

#### Theme II – City of Organized Development

The City of Organized Development section identifies the utility services found in Plano, the type of services they provide and how the services are delivered. Current issues facing the provision of utility services are addressed as well.

#### Theme III – City in Transition

Plano is undergoing a change in development trends. The city is transitioning from a time of growth to full development. With 95% of water and sewer infrastructure in place, there will be less reliance on impact fees to fund new facilities. The city’s focus will shift from the provision of new facilities to the maintenance and replacement of the existing infrastructure. Changes in the energy utilities industry and Plano’s approach in addressing federal storm water mandates will also be presented in this section.

## Theme I - Livable City

### *Utility Services*

Utility services are a key factor in the quality of life of a city. The provision of potable water, the proper treatment of wastewater and an adequate storm water system contribute to the health, safety and welfare of the residents. Communications, electric and natural gas are essential necessities for homes and businesses. The City of Plano provides water, sewer and storm water services while private utilities offer communications and energy services.

Where possible, the City of Plano should encourage private utilities to provide residents and businesses the latest products and service options available. Innovation in technology could mean physical changes in how service is delivered to customers. This may require coordination efforts between the city and the private utility service providers when new service delivery technology replaces the current system within city rights-of-way.

### *Utility Rates*

The City of Plano charges a fee for providing potable water, sewer (wastewater) and storm water services to residents and businesses. The revenues generated from the fees are used to cover the costs of providing utility services. It is important that the rates are competitive with other cities and yet cover the cost of service delivery. Table 1 contains an example of utility rates for water and sewer services for 10,000 gallons. The cities selected for the survey were either similar in size to Plano and or in close proximity to the city.

The findings from the survey indicated that Plano had the lowest rate for water and the highest rate for sewer services in the above example. When water and sewer services are added together for a billing statement, the city's rates are in the middle of group. This indicates that Plano's utility rates are comparable with other cities in the Metroplex.

**Table 1 – Water and Sewer Rates for Selected Metroplex Cities 2005-2006 Fiscal Year (based on 3/4 inch meter)**

| CITY         | WATER          | SEWER          | TOTAL          |
|--------------|----------------|----------------|----------------|
| Allen        | \$28.53        | \$25.22        | \$53.75        |
| Arlington    | \$34.25        | \$28.75        | \$63.00        |
| Dallas       | \$22.17        | \$34.56        | \$56.73        |
| Frisco       | \$28.01        | \$22.26        | \$50.27        |
| Garland      | \$29.02        | \$27.54        | \$56.56        |
| McKinney     | \$32.00        | \$34.16        | \$66.16        |
| Mesquite     | \$29.40        | \$28.40        | \$57.80        |
| <b>Plano</b> | <b>\$20.29</b> | <b>\$36.39</b> | <b>\$56.68</b> |
| Richardson   | \$28.95        | \$20.89        | \$49.84        |

Sources: Water and Sewer Rates from websites of all cities listed in Table.

The objective of wastewater treatment is to produce a clean effluent suitable for discharge back into the environment. Wastewater treatment incorporates physical, chemical and biological processes to treat and remove chemical and organic contaminants from sewage. One of the most costly processes is the removal of solid wastes from the water in the form of trash or sludge.

The Texas Public Utilities Commission (PUC) regulates the rates charged by private sector communication and electric utility service providers in the state. In Texas, electric generation, with the exception of electric cooperatives, is deregulated and operates as a free market while the wire infrastructure component remains regulated. The goal of the agency is to protect customers, foster competition and promote high quality infrastructure for utility service delivery. Quality infrastructure and utility services at affordable rates make Texas an attractive state for businesses. A private utility company must receive approval from the PUC before changing rates for service provision.

## Objectives for Theme I – Livable City

- ▶ **Objective A.1** Provide for adequate public and private utility services to meet the need of city residents and businesses.
- ▶ **Objective A.2** Offer utility rates that are competitive with those in other cities throughout the region while covering the cost of service provision.

## Strategies for Theme I – Livable City

- ▶ **Strategy A.1** Complete the water and sewer system so that there are no gaps in service delivery.
- ▶ **Strategy A.2** Work with private utility providers to ensure that ordinances and polices can accommodate innovative service technologies.
- ▶ **Strategy A.3** Monitor Plano’s water and sewer service rates to ensure competitiveness with other cities in the area.

## Theme II - City Of Organized Development

### *Utility Service Providers*

There are a variety of utility services within Plano. The city provides water and wastewater (sewer) services and storm water drainage through a system of underground pipes, above ground water towers, pumps and lift stations (used to transport water/sewer uphill), along with inlets and drains to collect and transport storm water runoff. Plano purchases water and wastewater treatment services from the North Texas Municipal Water District (NTMWD).

Since the deregulation of electric services, residents and businesses in areas of the city not served by CoServ (an electric cooperative) can choose from a variety of providers such as Green Mountain, Oncor and Reliant Energy for electricity. However, TXU Electric Delivery along with



*TXU Electric substation with landscaping at 16th Street and Alma Drive*

CoServ still provide the infrastructure (wires, poles, towers and under ground conduit) to deliver electricity to customers. Atmos Energy and CoServ provide natural gas services to Plano residents and businesses. Service delivery is similar to that of water by use of underground transmission and distribution pipes.

AT&T, Time-Warner, Grande Communications and Verizon are the most common among the numerous communication services providers. Telephone service is delivered in several formats; cellular service, voice over internet protocol (VOIP) and traditional service. Cellular service uses communication towers, electrical transmission towers and water towers to place antennas for service delivery. These facilities are located throughout the city. Land lines are serviced through fiber optic and copper wire cables along with cable television and internet services. Most of the services are delivered through subsurface cables. Aerial cables are co-located on utility poles.

### *Water Conservation*

NTMWD provides water and wastewater treatment along with solid waste disposal services for 1.5 million people in over 60 cities and utility districts. Plano is one of thirteen member cities of NTMWD. Member cities have a “take or pay”

system for acquiring water. The maximum amount of water that has been delivered to the city in any one year becomes the minimum amount the city must “take or pay” for the next year. Sometimes, cities do not use all of the water assigned within the contract. If this is the case the city can receive a partial rebate on the unused water; however, the contractual minimum does not change. Though this system can make it difficult for cities to encourage residents to conserve water, it is kept in place to ensure that cities have adequate supply to meet consumer demand. Given recent concerns about water availability, especially during drought periods, and the importance of local and regional water resources, member cities should continue to evaluate the practicality of continuing the “take or pay” system.

Resources to supply the water needs of the Metroplex are an ongoing concern due to continued population growth of the region and weather extremes. Residents and businesses should be encouraged to conserve water where possible. About half of all water consumed is used for landscaping irrigation. Where possible, the use of native plants and those adapted to the North Texas region should be encouraged. Also, education and awareness programs are necessary to inform businesses and residents about the amount of water and practices necessary to sustain landscaping. Excessive watering can have a major impact on the supply.

### ***Infrastructure Maintenance and Replacement***

Most of Plano’s water, sewer and storm water infrastructure were constructed in the 1980s and 1990s. It is important to determine the useful lifespan of the utility infrastructure. A maintenance and replacement plan is necessary to repair existing facilities on a regular basis. The plan would help to reduce the cost of maintenance and replacement of utility infrastructure in three ways. First, the repairs would occur before the useful lifespan of the system expires. Service delivery could continue without major interruptions. Second, upgrading a

smaller portion of the system on a regular basis is much less expensive than trying to replace the entire system at once. Finally, older portions of the storm water infrastructure were installed using lesser criteria than those currently applied. New sections of the system with increased capacity could move storm water more efficiently and increase public safety by reducing overflow at inlets and flooding.

### ***Private Utilities***

The City of Plano allows private utility companies to locate service delivery facilities within the public rights-of-way. Some utilities are required to have a franchise agreement in order to provide services within the city for a fee. Plano has a Comprehensive Right-of-Way Management ordinance that regulates all construction within the city’s rights-of-way. The ordinance provides for consistency, ensures public safety and mitigates inconvenience in the use of alleyways, sidewalks and streets due to construction work within the city’s rights-of way.

Plano will need to stay abreast of service delivery innovations and impact on the Comprehensive Right-of-Way Management Ordinance. This will require continuous coordination efforts with private utility companies.



*Infrastructure replacement near Cross Bend and Independence*

Plano has also established development standards that are used to regulate the location of telecommunication towers. The purpose of the regulations is to enhance the ability of telecommunications companies to provide services safely and efficiently. The regulations also help to mitigate the aesthetic impact of the towers on the community.

### **Objectives for Theme II – City of Organized Development**

- ▶ **Objective B.1** Provide and maintain safe, effective water, sewer and storm water systems with adequate capacities to serve the city's current and future needs.
- ▶ **Objective B.2** Systematically improve and replace the water, sewer and storm water infrastructure to ensure ongoing service.
- ▶ **Objective B.3** Encourage city residents and businesses to conserve water.
- ▶ **Objective B.4** Maintain a fair and equitable system of regulatory control over private utilities placed within the city's rights-of-way.

### **Strategies for Theme II – City of Organized Development**

- ▶ **Strategy B.1** Develop and implement a planned maintenance schedule with a one to two year horizon for upgrading and maintaining the water, sewer and storm water system.
- ▶ **Strategy B.2** Educate property owners on how to conserve water and sustain landscaping by providing educational materials within utility bills and on the city's website. Also, provide seminars on sustainability practices.
- ▶ **Strategy B.3** Update the Right-of-Way Management Ordinance as needed to address service delivery innovations.

## **Theme III – City In Transition**

### ***Changing Development Trends***

Less than 20% of all land in Plano is undeveloped. The percentage of undeveloped land zoned for residential uses is less than 5%. The Dallas-Fort Worth Metroplex is expected to grow by over 4 million people by 2030. There is an excess amount of land zoned for nonresidential uses and it is reasonable to



*Housing on land formerly zoned for non-residential uses at Legacy and Custer*

rezone some of it for residential development. Residential development on properties originally zoned for commercial uses will have the greatest impact on sanitary sewer (wastewater) capacity. Upgrades in certain locations may be necessary.

Water infrastructure is not affected in the same way. The water system has been designed to accommodate fire emergencies. As a result, the capacity of water systems exceeds use resulting from both residential and nonresidential development.

### ***Impact Fees***

Providing city services to new development can be expensive. The State of Texas allows cities to charge impact fees to developers to help offset some of the cost of constructing infrastructure to serve new developments. The City of Plano charges impact fees for water and sewer infrastruc-

ture. Texas state statutes require that revenue generated from the fees must be used towards the cost of building new infrastructure. It cannot be used to upgrade or replace an existing facility to serve new development. Plano's Impact Fee program was last updated in 2003 and the fees charged remained unchanged from the previous update completed in 1999. State statutes require that the program be updated again in 2008.

The statute requires that each city estimate future land use and intensity and then calculate the costs of new infrastructure needed to accommodate development. Cities cannot charge developers more than the maximum amount calculated to provide the necessary infrastructure. Plano does not charge the maximum fee since new development is expected to help pay for the improvements over time.

With the next update, the city should consider the relevancy of continuing the impact fee program beyond 2008. The reasoning behind the consideration is two-fold. First, nearly the entire water and sewer system is in place, with only 5% still left to construct. Second, the elimination of the impact fees program could be an economic development incentive for Plano. This could make the city more attractive for future development as Plano competes with growing cities that have impact fee programs in place.

### ***Long Range Water Supply Plans***

Future supply of water will become an increasingly important issue due to continued population growth and weather extremes. Member cities of the North Texas Municipal Water District (NTMWD) will need to work with the organization to ensure there is enough water to meet the region's needs.

The NTMWD has four projects underway to meet future water needs. The first two projects address short term demand. The first project was obtained in 2006 through the purchase of 18,000 acre-feet/year of water from the Greater Texoma Utility



*Lake Lavon, principle source of water for NTMWD*

Authority from Lake Texoma. The facilities and pipelines are in place for immediate use of the water. The second supply of water was obtained in October 2005. This plan involves 50,000 to 80,000 acre-feet/year of water from the Sabine River Authority. The water is from the upper Sabine River Basin that includes Lake Tawakoni and Lake Fork. Facilities and pipelines are under design and construction could begin in late 2006. This water supply should be available by 2008.

The second set of projects involves the submittal of applications for additional water resources in the near future. The first application is a water rights permit from the Texas Commission on Environmental Quality (TCEQ) and the United States Corps of Engineers. Approval of the permit is expected within the next 12 months. This would include an additional 113,000 acre-feet/year of water from Lake Texoma. The second application is for a water rights permit from TCEQ for the East Fork Reuse Project that will initially produce 80,000 acre-feet/year of water for NTMWD. This project involves the construction of a 1,800 acre wetland along the East Fork of the Trinity River in Kaufman County. Land has been acquired for the project while the permit process, design and construction are moving forward. Ultimately, the amount of water resulting from the East Fork Reuse project would be equal to that of Lake

Lavon and should be available in 2008 if the permit is approved.

Another issue impacting adequate water supply are delivery points. Plano has currently five delivery points for water entering the city's system. Additional delivery points should be considered, particularly in the western part of the city to address temporary system problems that may occur during an emergency. The city may need to consider an arrangement with another water source in an emergency situation where NTMWD is unable to provide water. If an emergency would occur, the city has 84 million gallons of water in storage tanks. Residents would be asked to stop all landscaping irrigation and conserve water until service is restored.

### ***Storm Water Management***

In 1990, the federal government mandated local communities to manage storm water runoff and improve the quality of discharged water entering the natural drainage system. Increased amounts of water are flowing into natural drainage areas due to more land covered by impervious surfaces. This includes roofs of structures and parking lot and roadway pavement that do not allow the ground to absorb water generated from a storm. The excess water collected from urban areas flows into inlets and storm drains that eventually empty into rivers and streams. The increased amount of water can cause flooding of low lying areas and erosion of stream banks.

Another issue of storm water runoff is pollution. The water collects oil, chemicals, fertilizer and pesticides from agricultural areas, landscaping, roof tops and pavement. All of these pollutants enter into the natural drainage system and negatively impact the quality of water in the streams. That same water eventually flows into area reservoirs and is used for drinking, bathing and preparing food.

The City of Plano has adopted a storm water management plan and has a permit with the Environ-

mental Protection Agency (EPA). Each year, the city provides a report to the Texas Commission on Environmental Quality (TCEQ) on its activities to manage storm water and improve water quality in creeks and lakes. This report is a requirement of the permit with EPA.

Plano is also working with the North Central Texas Council of Governments (NCTCOG) on a regional management plan for storm water. The city, in conjunction with other local jurisdictions, participated in the development of NCTCOG's development of the Integrated Storm Water Management Manual (ISWM). The manual addresses water quantity, water quality and stream bank erosion issues.

### ***Erosion Control***

Plano has an Erosion Control Ordinance. This regulation has been in existence since the early 1990s with the last update approved by City Council on June 1, 1998. The focus of the ordinance is to reduce and limit the amount of erosion and sedimentation resulting from construction activities. An erosion control plan is required for any land disturbing activity 5,000 square feet or greater in area within Plano. The plan shows the contractor how to control erosion /runoff from the construction site and is prepared in coordination with state permit requirements.



*Erosion control along creek near Laurel and Peachtree*

The Texas Pollutant Discharge Elimination System (TPDES) permit program is administered by the TCEQ through an agreement with EPA. The EPA still exercises oversight authority over the state and local jurisdictions on storm water issues. Larger construction sites also require state permit coverage and preparation of a Storm Water Pollution Prevention Plan (SW3P). This is for all construction sites greater than one acre in size. Sites over five acres must also submit a \$100 application fee to the TCEQ. The TPDES permit program is in place to ensure that sediment and chemicals used at construction sites such as concrete, paint, solvents and hydrated lime do not leave the area and get into the natural drainage system.

### ***Private Utility Trends***

More utility services are becoming deregulated due to the increased number of businesses providing similar services. The deregulation of utilities can lead to further research and development regarding type of services provided and innovations on service delivery.

An example of deregulation is telecommunications. The communications industry has been deregulated for some time. This has led to service delivery innovations such as wireless telephone services and the bundling of traditional land line telephone services with cable television and internet. The results are mixed. Plano has had to develop regulations involving the placement and height of cell towers to balance the need of such facilities with community design and aesthetics. On the positive side, the innovation of three communication services bundled into one conduit means fewer cables in the public rights-of-way along Plano's streets.

### ***Energy Resources***

As more nations industrialize and rely primarily on fossil fuels for energy resources, supplies are becoming scarcer. The result has been less fuel available for consumption at higher prices. This situation could impact future urban development



*Wind power, example of an alternative energy resource*

growth patterns in the Metroplex. Outward expansion may be severely impacted by rising transportation fuel costs.

Another issue regarding fossil fuels is the generation of electricity. The Metroplex already consumes more electricity than it can generate. There is a need for additional electric generating facilities. Most electricity is made through use of coal. This is a finite resource that when consumed, can cause air quality problems. The region is already considered a non attainment area for ozone pollution by the EPA.

It will be important for Plano to work with other cities in the Metroplex to develop solutions that would encourage residents to use alternative means of transportation that would reduce fuel costs, consumption of energy resources dependent on fossil fuels and improve air quality. Examples include the use of bicycle, walking, mass transit and hybrid vehicles for transportation and solar power, wind generation and geothermal energy for energy needs. Future studies are needed to determine potential innovative technologies that can harness these energy sources more efficiently. Though these alternative energy resources may never fully replace fossil fuels, they could help to slow down the use of these resources and improve air quality by decreasing reliance on them.

### **Objectives for Theme III – City in Transition**

- ▶ **Objective C.1** Determine the desirability of continuing the Impact Fee program.
  - ▶ **Objective C.2** Ensure that Plano has the supply of water needed to meet long term needs.
  - ▶ **Objective C.3** Balance sanitary sewer capacity with long term land use requirements.
  - ▶ **Objective C.4.** Protect creeks, public and private property from the consequences of excess storm water runoff.
  - ▶ **Objective C.5** Ensure that the city has temporary water connections to address emergencies.
  - ▶ **Objective C.6** Meet the goals and objectives of Plano’s storm water management plan.
  - ▶ **Objective C.7** Continue participation in regional efforts to establish storm water best management practices
  - ▶ **Objective C.8** Promote multi-jurisdictional efforts aimed at providing for adequate long term energy supplies to serve the region and protect its natural environment.
  - ▶ **Objective C.9** Promote multi-jurisdictional efforts to meet EPA standards for air and water quality.
- ▶ **Strategy C.3** Work with other water supply systems to ensure alternative sources of water in emergency situations.
  - ▶ **Strategy C.4** Implement the city’s storm water management plan, monitor its effectiveness and refine as needed.
  - ▶ **Strategy C.5** Continue enforcement of Plano’s Erosion Control Ordinance.
  - ▶ **Strategy C.6** Provide annual reports of Plano’s storm water management to the regulating authorities.
  - ▶ **Strategy C.7** Continue participation in the development and implementation of NCTCOG’s Integrated Storm Water Manual.
  - ▶ **Strategy C.8** Work with other jurisdictions to study the impact of future growth on long term energy needs.
  - ▶ **Strategy C.9** Evaluate alternative transportation options for the Metroplex along with other cities and counties in the region to improve air quality.

### **Strategies for Theme III – City in Transition**

- ▶ **Strategy C.1** Use the study of the water and wastewater system conducted at time of the impact fee update to determine desirability of continuation of the program.
- ▶ **Strategy C.2** Assess the ability of the sewer system to handle residential uses at locations rezoned for housing. Identify changes required to the existing system to accommodate residential uses.