City of Melissa

2015 Comprehensive Plan Update

Chapter 4: Utilities Assessment

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Introduction

Planning for and providing infrastructure is perhaps one of the most important responsibilities of a city government. Citizens should be secure in the knowledge that they can rely on their local government to ensure that there is adequate water and wastewater capacity for the current population, as well as for future growth. Without these basic necessities, a community simply cannot accommodate growth.

The City of Melissa has been diligent in reviewing its water and wastewater needs on a consistent basis. In an effort to predict future water and sewer demands and provide for anticipated growth, the City of Melissa has prepared and begun implementation of a long term capital improvement plan for water and wastewater system improvements. Expansion of both systems, water and wastewater, will be of the utmost importance as the City grows and must supply to an increasing number of citizens and non-residential customers. This *Utilities Assessment* is intended to provide an overview of Melissa's infrastructure system and the capacity of that system in relation to the current population and to the future population that is anticipated to be part of Melissa.

Water & Wastewater Service Provision

Water Services

Water service provision is an especially critical issue for all cities in North Central Texas. The availability of water has become an increasing concern throughout Texas. Not only is potable water a necessary commodity for drinking, it is presently being used for irrigation systems. Potable water supply has become a major challenge in Melissa, since the vast majority of new homes built within the City have in-ground sprinkler systems. The irrigation systems heavily tax the potable water supply during the dry summer months. Current information on Melissa's water service is as follows:

- Due to recent watering restrictions necessitated by the on-going regional drought, current water usage in the City is slightly lower than historical usage. Current water usage in the City ranges from approximately 110 gallons per day (gpd) per capita during winter months to approximately 200 to 250 gpd per capita in summer months. Water usage will likely trend back to historical usage levels when water restrictions are lifted. As a result, it is anticipated that future water usage in the City will range from approximately 125 gpd per capita during winter months to approximately 225 to 275 gpd per capita in summer months.
- The City is currently supplied with potable water from two groundwater wells with a total capacity of approximately 350 gallons per minute (gpm), a 12-inch water supply line through which potable water is purchased directly from the North Texas Municipal Water District with a contract limited capacity of 350 gpm, and a 30-inch water supply line through which potable water is purchased from Greater Texoma Utility Authority with a design capacity of 5,000 gpm. In total, the City has a contractual water supply of approximately 5,700 gpm, or 8.2 million gallons per day. Based on minimum state standards, this is a sufficient water supply to provide adequate service to approximately 9,500 customers. Given the mix of residential and commercial customers anticipated in the City of Melissa, this water supply is sufficient to meet typical suburban water supply demands for a population of approximately 17,500 to 22,500.
- The City currently has one 750,000 water tower and approximately 1 million gallons of ground storage capacity. Minimum state standards for ***water tower storage*** range from 100 to 200 gallons per connection, depending on the water system's pumping capacity. Based on the minimum state standards and given the anticipated mix of residential and commercial customers, the City of Melissa's water tower capacity can accommodate a population of 10,000 to 20,000 residents.
- The City currently has 1,750,000 of ***total storage*** capacity. Based on the minimum state standard of 200 gallons of total storage capacity per connection and given the anticipated mix of residential and commercial customers, the City of Melissa's total storage capacity can currently serve a population of approximately 20,000 residents.
- The City of Melissa's water distribution system currently has a total pumping capacity of approximately 3,300 gallons per minute. Minimum state standards for pumping capacity range from 0.6 to 2.0 gpm per

connection, depending on elevated storage capacity of the system. Given the anticipated mix of residential and commercial customers, the City of Melissa's water distribution pumping capacity can currently serve a population of up to approximately 15,000 to 20,000.

- Current City of Melissa water system capacities are summarized in the following table.

Water System Component	Current Capacity	Population Allowed
Water Supply	5,200 gpm (8.2 mgd)	17,500 to 22,500
Water Tower Capacity	750,000 gallons	10,000 to 20,000
Total Storage Capacity	1,750,000 gallons	~20,000
Distribution Pumping Capacity	3,300 gpm (4.8 mgd)	15,000 to 20,000

- The City of Melissa's water supply and distribution system is currently able to support the population of approximately 10,000 to 17,500 residents. Future water system capacities needed to support the estimated ultimate population of approximately 119,072 (refer to Chapter 3, the Future Land Use Plan) are summarized in the following table. Various aspects of Melissa's water supply and distribution system have to be monitored in relation to each other and expanded as necessary to ensure the City of Melissa's water supply and distribution system can serve current residents and accommodate anticipated growth. It appears that additional water tower capacity and/or additional distribution pumping capacity will be necessary in the very near future to accommodate current growth trends in the City of Melissa.

Water System Component	Current Capacity	Ultimate Capacity
Water Supply	5,200 gpm (8.2 mgd)	55 to 65 mgd
Water Tower Capacity	750,000 gallons	4.25 to 8.5 million gallons
Total Storage Capacity	1,750,000 gallons	~8.5 million gallons
Distribution Pumping Capacity	3,300 gpm (4.8 mgd)	36 to 84 mgd

Wastewater Services

The City has adequate wastewater service and capacity. Current information on Melissa's wastewater service is follows:

- Current wastewater usage is estimated at 95 gallons per person per day, which calculates into approximately 700,000 gpd for the current population of Melissa.
- The current total wastewater system capacity is in excess of 5 million gallons per day.
- Wastewater treatment is provided to the City by the North Texas Municipal Water District at the Wilson Creek treatment plant south of McKinney, Texas.
- Future wastewater system capacity needed to support the ultimate population of approximately 119,072 will be approximately 11 mgd.

Recommended Utility Policies

Following are the recommended utility-related policies. The *Implementation Plan*, Chapter 9, will outline specific ways in which the City can implement the utility policies, along with other recommended policies from within this *2015 Comprehensive Plan*.

Policy 1: Ensure City Services Are Adequate As Melissa Continues to Grow

U1.1 | The City should continue to monitor and increase water service availability.

- System expansion should be consistent in order to meet the needs of local population growth and to meet the State requirements for water supply related to population.
- Water conservation measures and related public awareness should continue, especially during high-usage summer months.
- The Future Land Use Plan Map should be used to determine where and how water system expansion should be pursued (i.e., in relation to land use type and density).
- A water system master plan should be kept up-to-date, with planned water system expansion correlated to funding.

U1.2 | The City should continue to monitor and increase wastewater service availability.

- As with the water system, the wastewater system should also be consistently expanded to meet population growth and State requirements for wastewater supply. However, water system expansion is currently more of a critical issue than wastewater system expansion.
- The Future Land Use Plan Map should be used to determine where and how wastewater system expansion should be pursued (i.e., in relation to land use type and density).
- A wastewater system master plan should be kept up-to-date, with planned wastewater system expansion correlated to funding.

Policy 2: Provide Services in the ETJ in Limited Instances

Part of the challenge for Texas cities is that the State does not allow the application of consistent requirements within city limits and within ETJ areas. This often causes ETJ areas to grow more rapidly than areas within cities, and such growth is often of a lesser quality than that which occurs within cities. Melissa therefore needs to have a strong policy related to how service provision is extended to its ETJ areas. Such provision needs to be consistent with procedures and requirements within the City limits, so that a "hidden" incentive is not provided that in effect encourages development in Melissa's ETJ.

U2.1 | The City should ensure that services are provided in the ETJ (outside the City limits) only under the following circumstances.

- As part of an agreement that provides for development consistent with the Comprehensive Plan;
- The City's ability to annex the property in the future;
- The quality of the development occurring is consistent in every way to City standards;
- That would otherwise be imposed if development was occurring within the City limits;
- For a use or development that offers significant public benefits (such as major employment, public services, education, etc.) to the entire Melissa community.

U2.2 | The City should ensure that its subdivision regulations are equally enforced within the ETJ, as they are in the City limits.

- If standards are reduced in the ETJ, the City could create economic advantages for developers to develop in the ETJ.
- It is in Melissa's interest to require the same standards in the ETJ, because it is likely that at some point in the future, the ETJ area will be within the City limits. The City does not need to have the financial responsibility for improving sub-standard development when such development is brought into the City.

Policy 3: Investigate Increased Developer Participation in Utility Infrastructure

U3.1 | The City has adopted water and wastewater impact fees as a means to fund future expansion of the water and wastewater systems. The City should keep water and wastewater impact ordinances current within the guidelines of state law to ensure this revenue stream remains viable for expansion of the water and wastewater system.

Chapter 395 of the Texas Local Government Code addresses the issue of developer participation in the construction of off-site facilities such as water, wastewater, and roadways. This state law allows cities in Texas to decide whether to assess fees for utility-related construction to new residential and nonresidential development. Impact fees can be described as fees charged to new development based on that development's impact on the infrastructure system. The primary advantage to having this funding source is that it provides cities with the increased ability to plan and construct capital facilities so that the needed infrastructure system capacity is available when the market warrants.

- Keeping an impact fee study current with regular updates as required by state law would help the City understand the extent of the expenditures that will have to be made for new development in the coming years.

- With impact fees, the development community is responsible for paying its related share of the cost of growth and the impact of that growth on local infrastructure systems.
- Without impact fees, utility system expansions due to growth will likely be financed through taxes (e.g., ad valorem, sales tax, pro rata) and customer generated revenues, which are paid by existing as well as future residents.
- Impact fees are also a means by which proportionality (of what the developers should be required to contribute) can be established.