



# AGENDA

**City of Lucas  
Planning and Zoning Commission  
October 13, 2016  
7:00 PM**

**City Hall - 665 Country Club Road – Lucas, Texas – 75002**

Notice is hereby given that a City of Lucas Planning and Zoning Meeting will be held on Thursday, October 13, 2016 at 7:00 pm at the Lucas City Hall, 665 Country Club Road, Lucas, Texas, 75002-7651 at which time the following agenda will be discussed. As authorized by Section 551.071 of the Texas Government Code, the Planning and Zoning Commission may convene into closed Executive Session for the purpose of seeking confidential legal advice from the City Attorney on any item on the agenda at any time during the meeting.

## Call to Order

- Roll Call
- Determination of Quorum
- Reminder to turn off or silence cell phones
- Pledge of Allegiance

## Regular Agenda

1. Consider approval of the minutes of the September 8, 2016 Planning and Zoning Commission meeting. *(City Secretary Stacy Henderson)*
2. Consider approval of a landscape plan for the Angel Parkway Pet Hospital located at 571 South Angel Parkway, part of the Angel Addition, Lot 1, Block A. *(Development Services Director Joe Hilbourn)*
3. Discuss and give staff direction regarding updates to the Comprehensive Plan, Chapter 8 – Water and Sewer, including the Sewer Master Plan Map. *(Development Services Director Joe Hilbourn)*

## Executive Session

The Planning and Zoning Commission may convene in a closed Executive Session pursuant to Chapter 551.071 of the Texas Government Code.

An Executive Session is not scheduled for this meeting.

4. Adjournment.

## Certification

I hereby certify that the above notice was posted in accordance with the Texas Open Meetings Act on the bulletin board at Lucas City Hall, 665 Country Club Road, Lucas, TX 75002-7651 and on the City's website at [www.lucastexas.us](http://www.lucastexas.us) on or before October 7, 2016.

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Stacy Henderson  
City Secretary

*In compliance with the American with Disabilities Act, the City of Lucas will provide for reasonable accommodations for persons attending public meetings at City Hall. Requests for accommodations or interpretive services should be directed to Stacy Henderson at 972-912-1211 or by email at [sbhenderson@lucastexas.us](mailto:sbhenderson@lucastexas.us) at least 48 hours prior to the meeting.*



# City of Lucas

## Planning and Zoning Agenda Request

### October 13, 2016

Requester: City Secretary Stacy Henderson

#### **Agenda Item:**

Consider approval of the minutes of the September 8, 2016 Planning and Zoning Commission meeting.

#### **Background Information:**

NA

#### **Attachments/Supporting Documentation:**

1. Minutes of the September 8, 2016 Planning and Zoning Commission meeting.

#### **Budget/Financial Impact:**

NA

#### **Recommendation:**

NA

#### **Motion:**

I make a motion to approve the minutes of the September 8, 2016 Planning and Zoning Commission meeting.



City of Lucas  
Planning and Zoning Commission  
Regular Meeting  
September 8, 2016  
7:00 PM  
City Hall – 665 Country Club Road

## MINUTES

### Call to Order

Chairman Rusterholtz called the meeting to order at 7:00 pm.

**Commissioners Present:**

Chairman Peggy Rusterholtz  
Vice Chairman David Keer  
Commissioner Andre Guillemaud  
Commissioner Joe Williams (*arrived at 7:10pm*)  
Alternate Commissioner Scott Sperling (*arrived at 7:13pm*)

**Commissioners Absent:**

Commissioner Brian Blythe

**Staff Present:**

Development Services Director Joe Hilbourn  
City Attorney Joe Gorfida  
Permit Technician Donna Bradshaw

**City Council Liaison Present:**

Mayor Jim Olk

**Staff Absent:**

City Manager Joni Clarke  
City Secretary Stacy Henderson

It was determined that a quorum was present. Everyone was reminded to turn off or silence cell phones and the Commission recited the Pledge of Allegiance.

### Public Hearing

1. **Public hearing to recommend amendments to the Code of Ordinances, Chapter 14, Article 14.04, Division 8 - Accessory Buildings, Structures and Uses regarding square footage requirements for habitable space and accessory buildings; and amendments to the Code of Ordinances, Schedule Use Chart related to guest/servant quarters and accessory buildings with habitual space.**

Development Services Director Joe Hilbourn updated the Commission stating that recommended changes from the last Planning and Zoning meeting had been incorporated into the proposed ordinance.

Chairman Rusterholtz opened the public hearing at 7:02 pm. The following individuals came forward to speak regarding the request.

Jaclynn Cauthorn, 1622 Snider Lane, stated that she was not in favor of adding additional regulations regarding accessory buildings, and believed that the City should allow residents to make their own decisions related to their property.



Mark Horton, 1895 Sawmill Drive, noted his concerns related to placing restrictions on who can live in the accessory building/guest quarters and believed the City was overregulating what should be allowed.

Kevin Bradshaw, 16 Carey Lane, stated that he was in favor of the amendments noting that his property was zoned Residential-2 that allows for one home on a lot, not two homes. He stated that he believed eventually these accessory buildings would be used as rental space and was not in favor of using guest quarters as rentable space.

Lisa Chapman, 2285 Lucas Creek Drive, stated that she was opposed to the amendments expressing concern related to the definition of containers. She noted that the definition was not adequately defined and should be amended to clearly identify what classified as a container. Ms. Chapman also expressed concern regarding amendments to habitable space and noted that the same square footage requirements should be allowed within each residential zoning district. Lastly, Ms. Chapman stated that a property owner should be allowed choose who could occupy the accessory building.

Leon Luckey, 1065 Wendy Lane, noted that he was neither for nor against the amendments, but wanted whatever restrictions that were put in place to be kept to a minimum.

Laura Strain, 1760 Winningkoff, shared her concerns related to the restrictions on who may live in the guest quarters, and she believed that any restrictions placed on a property would be better served through the Homeowners Association and not the City.

There being no one else wishing to speak, Chairman Rusterholtz closed the public hearing at 7:19 pm.

City Attorney Joe Gorfida explained that should the ordinance be passed, any existing accessory building legally placed on a property under the current ordinance would be grandfathered. He also noted that if a building permit was filed for an accessory building, prior to the ordinance being passed, the accessory building would also be grandfathered. Mr. Gorfida stated that under State Statute, the City was required to place in ordinances the maximum amount of penalty that could be assessed. For all zoning ordinance penalties, the maximum assessed amount was \$2,000 a day. Mr. Gorfida noted that the Judge sets the fine amount. Mr. Gorfida also explained that the existing accessory building ordinances does not allow for accessory buildings to be rented, and while rental restrictions cannot be placed on the main structure; the home, under State law rental restrictions were allowed to be placed on accessory buildings.

Mr. Hilbourn discussed the different square footage requirements proposed for accessory buildings within residential zoning districts. He noted that the size of the accessory building varies depending on the size of the lot.

Commissioner Guillemaud asked how the 25 foot maximum height requirement for accessory buildings was established.

Mr. Hilbourn stated that amendments to the accessory building ordinance occurred in 2006 after complaints were received from homeowners regarding large accessory building blocking views in residential neighborhoods.

Commissioner Guillemaud explained that the definition outlined in the ordinance related to who may live in accessory buildings was very broad and the definition was designed to allow for single family use, and not to allow for renters.

The Commission discussed the square footage requirements currently allowed in residential zoning districts that consist of:

Current Ordinance Requirements:

R-1: 1,000 square feet

R-1.5: 1,250 square feet

R-2: 1,500 square feet

The Commission discussed proposing the following square foot requirements:

R-1: 600 square feet

R-1.5: 800 square feet

R-2: 1,000 square feet

**MOTION:** *A motion was made by Vice Chairman Keer, seconded by Commissioner Williams to recommend approval of an ordinance amending Chapter 14 of the Code of Ordinances as presented with the following changes:*

- 1) *Section 14.04.302(d) change 45 days to 90 days related to industrial, commercial and agriculture use of trailers, containers or commercial boxes for temporary storage;*
- 2) *Section 14.04.304(c) change square footage requirements from 600 to 800 square feet for Residential 1.5 zoning.*

*The motion passed unanimously by a 4 to 0 vote.*

Chairman Rusterholtz noted that at this time Alternate Member Scott Sperling would be seated as a voting member for the remainder of the items on the agenda.

**2. Public hearing to recommend amendments to the City's Code of Ordinances Chapter 10, Section 10.03.123 (i) Streets and Drainage for changes to street lighting requirements regarding where street lights are to be located and including an appeal process.**

Mr. Hilbourn noted that all recommended changes from the previous Planning and Zoning Commission meeting had been incorporated into the proposed ordinance. Mr. Hilbourn explained the two amendments to the ordinance included 1) removing the requirement that all subdivisions have street lighting, and were required only when safety precautions exist; 2) Give citizens an appeal process if street lighting had been turned off by the City.

Chairman Rusterholtz opened the public hearing at 7:44 pm and asked if anyone wished to speak regarding this item. There being none, the public hearing was closed.

**MOTION:** *A motion was made by Commissioner Williams, seconded by Commissioner Guillemaud to recommend approval of an ordinance amending the City's Code of Ordinance, Chapter 10, Section 10.03.123 (i) Streets and Drainage for changes to street lighting requirements regarding where street lights are to be located and including an appeal process. The motion passed unanimously by a 5 to 0 vote.*

## Regular Agenda

### 3. Consider approval of the minutes of the August 11, 2016 Planning and Zoning Commission meeting.

**MOTION:** *A motion was made by Commissioner Sperling, seconded by Commissioner Guillemaud to approve the minutes of the August 11, 2016 Planning and Zoning Commission meeting. The motion passed unanimously by a 5 to 0 vote.*

### 4. Discuss and give staff direction regarding updates to the Comprehensive Plan, Chapter 7 – Streets and Drainage, including the Thoroughfare Plan.

Chairman Rusterholtz asked if anyone in the audience wanted to speak regarding this item. There was no one wishing to speak.

Chairman Rusterholtz noted that the Thoroughfare Plan depicted roundabout designations on the Plan and would like them removed.

Vice Chairman Keer noted that on page 1, paragraph 4, the term “adequate facilities” should be clarified to state “adequate streets and drainage”.

There was no formal action on this item, it was for discussion purposes only.

### 5. Adjournment.

**MOTION:** *A motion was made by Commissioner Williams, seconded by Commissioner Sperling to adjourn the meeting at 7:54 pm. The motion passed unanimously with a 5 to 0 vote.*

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Peggy Rusterholtz, Chairman

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Stacy Henderson, City Secretary



**City of Lucas**  
**Planning & Zoning Agenda Request**  
**October 13, 2016**

Item No. 02

Requester: Development Services Director Joe Hilbourn

**Agenda Item:**

Consider approval of a landscape plan for the Angel Parkway Pet Hospital located at 571 South Angel Parkway, part of the Angel Addition, Lot 1 Block A.

**Background Information:**

This item was brought before the Planning and Zoning Commission in January of 2016 at the time the site plan was approved. The plan was denied due to lack of clarity. The print quality was too light and difficult to read. It was difficult to separate on the plans, required elements from non-required elements. These items have been corrected.

**Citizen Summary:**

Landscape plan approval is a required element for any property located within the Commercial Business zoning district. This item was previously brought forward and denied due to the print quality of the site plan and the required and non-required elements not easily defined. The corrections requested by the Planning and Zoning Commission have been addressed by the applicant on the current plan.

**Attachments/Supporting Documentation:**

1. Landscape plan.

**Budget/Financial Impact:**

NA

**Recommendation:**

City Staff recommends approval as presented.

**Motion:**

I make a motion to recommend approval/denial of the landscape plan for the Angel Parkway Pet Hospital located at 571 South Angel Parkway, part of the Angel Addition, Lot 1 Block A.



ive

)

Lake Falcon Drive

( 45' RIGHT-OF-WAY )

F.M. Highway  
(S. Angel H

( VARIABLE WIDTH

N00°48'47"W  
135.00'

FL 30" RCP  
641.74'

FL 30" RCP  
641.82'

FL 30" RCP  
641.78'

"X" SET TBM  
ELEV. =644.72

#### LANDSCAPE NOTES:

Grass to be Hydromulch Bermuda or solid sod 419 Bermuda. Check with the City of Lucas to determine how to apply turf grass during water restrictions

All landscape areas to be watered by a fully automatic irrigation system including rain and freeze sensors as per City of Lucas and TECQ codes.

Grass and bed areas to be separated by 14 gauge metal edging

Contractor to verify plant material quantities and notify owner of any conflicts

Bed preparation shall consist of incorporating one 4 cubic foot bale of spagnum peat moss and one 3 cubic foot bag of landscapers mix per 75 sq. ft. into the top six inches of existing soil.

All plant material shall meet American Nursery Standards for height and width in each container size. With the exception of ground cover beds, all plant material shall be mulched with 2" of cedar mulch (minimum

Trees shall have a root ball of a minimum of 10 inches of diameter for each inch of caliper.

Contractor shall be responsible for locating all utilities and obtaining permits as required by City of Lucas.

#### LANDSCAPING REQUIREMENTS:

Site: 41861sq. ft X 15% = 6280 sq.ft.) 6280 sq. ft.  
Provided: ( >40% ) 20452 sq. ft.

Landscape Edge: (1 shade Tree & 8 shrubs per 20 linear feet of street frontage)

FM 2551: 135'

Trees Required: (135/20=6.75)

Trees Provided: 7

Shrubs Required: (135/20x8=54)

Shrubs Provided: 54

Parking Lot Screening: Provided

Interior Parking Lot: 29 spaces (10425 s.f. x5% =522 s.f.)

Landscape Area Required: 521 sq. ft.

Provided: 693 sq. ft.

Trees Provided: 3

Trees Required (1 tree per 10 spaces) (29 spaces/10 =2.9)

Trees Provided: 4

Parking Lot Perimeter: (1 shade tree and 8 plants per 20 linear feet)

South (98')

Trees Required: (98/20=4.9)

Trees Provided: (None due to drainage esmt.)

Shrubs Required: (135/20x8=54)

Shrubs Provided: (None due to drainage esmt.)

West (124')

Trees Required: (124/20=6.2)

Trees Provided: 6

Shrubs Required: (124/20x8=49.6)

Shrubs Provided: 54

LINE LEGEND:	
-----	PROPERTY LINE
-----	DRAINAGE FLOW
-----	PROPOSED WATER LINE
-----	PROPOSED CURB
- 610 -	EXISTING CONTOUR LINE
-----	BUILDING SETBACK LINE
-----	UTILITY EASEMENT
-----	DRAINAGE DIVIDE LINE
-----	LOT LINE

VACANT  
REMAINDER  
LOT 2, BLOCK A - ANGEL ADDITION  
PART OF  
CALLED 21.751 ACRES  
PENNINGTON PARTNERS, LTD.  
VOL. 5104, PG. 1102,  
D.R.G.C.T.

PROPOSED 6' WOOD FENCE  
N89°44'30"E  
310.00'

LOT 1, BLOCK A - ANGEL ADDITION

PART OF

CALLED 21.751 ACRES

PENNINGTON PARTNERS, LTD.

VOL. 5104, PG. 1102,

D.R.G.C.T.

0.961 Acres

PROPOSED VET CLINIC AND LEASE SPACE  
SINGLE STORY - 35' MAX HEIGHT  
1,375 SF - TOTAL BUILDING  
3,250 SF - PET HOSPITAL  
1,125 SF - LEASE SPACE

PERPENDICULAR D.P.R.

PROPOSED DUMPSTER LOCATION  
WITH 6" MASONRY SCREENING  
WALL TO MATCH BUILDING  
FACADE WITH METAL GATES

CONCRETE PAVING  
FIRE LANE, ACCESS  
AND UTILITY EASEMENT  
(VOL. 2015, PG. 380)

S89°44'30"W  
310.00'

EXISTING KWIK KAR  
LOT 2, BLOCK A  
SC LUCAS ADDITION  
VOL. 2015, PG. 360,  
M.R.G.C.T.

"X" SET TBM  
ELEV. =643.73

#### Fence Design

Side by Side or Stockade Style

Material: Cedar or Treated Pine

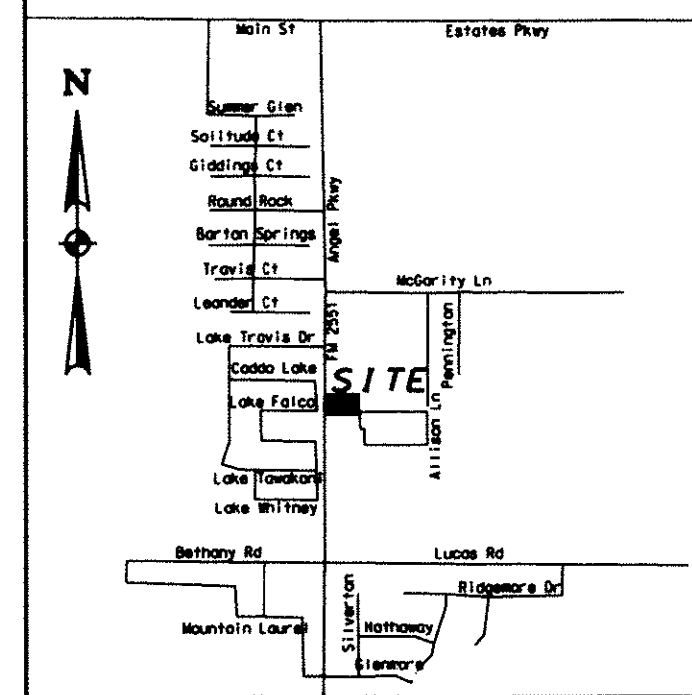
Pickets: 1"x4" or 1"x6" Wood with Flat Top

Rails: 2"x4" Wood Minimum 3 Rails (Bottom,

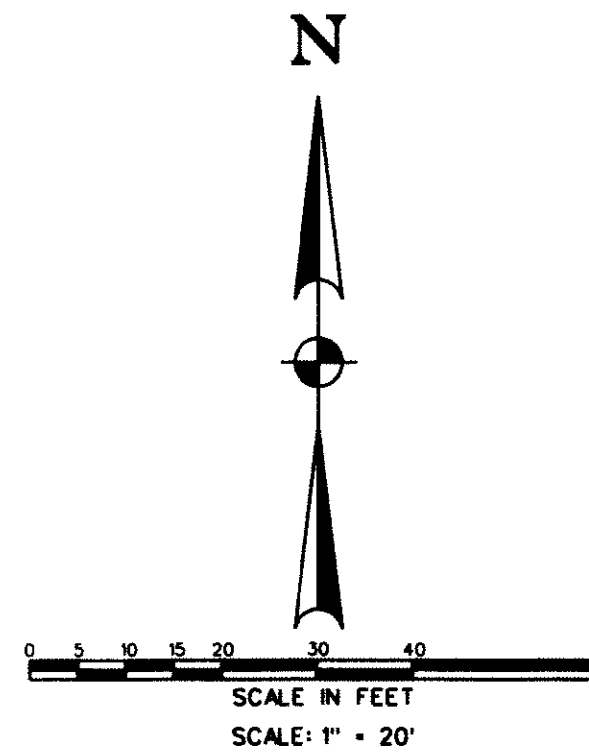
Middle Top)

Post: Metal-Galvanized Steel (Minimum 2" Diameter  
with concrete footing) or Wood Square or Round Post  
Minimum 4" Diameter.

Fasteners: Coated Screw or Nails or Galvanized  
Screws or Nails.



VICINITY MAP  
NOT TO SCALE



#### SITE DATA SUMMARY - ANGEL PARKWAY PET HOSPITAL

- EXISTING ZONING: PD 2004-10-108 AND BG
- PROPOSED ZONING: SAME
- PROPOSED USE: VETRINARY CLINIC - GENERAL/MED OFFICE
- PROPERTY AREA: 41,861 SF - 0.961 ACRES
- AREA OF PROPOSED BUILDING: 4,375 SF
- BUILDING HEIGHT: ONE STORY  
35' MAX BUILDING HEIGHT
- LOT COVERAGE: 10.45%  
F.A.R. = .10:1
- PARKING REQUIRED: 1 SPACE/200 SF = 4375/200 = 22 SPACES
- PARKING PROVIDED: 27 SPACES + 2 ACCESSIBLE = 29 SPACES

ARCHITECT:  
PLACES MADE ARCHITECTURE  
2840 KELLER SPRINGS ROAD, SUITE 103  
CARROLLTON, TEXAS 75006  
(214)529-9508  
DAVID O'SHEA

CONTRACTOR:  
TRI-STAR CONSTRUCTION  
3601 YUCCA DRIVE  
FLOWER MOUND, TEXAS 75028  
RANDY AHLFS  
(972)221-5558

ENGINEER:  
HELMBERGER ASSOCIATES, INC.  
1525 BOZMAN ROAD  
WYLIE, TEXAS 75098  
RANDALL T. HELMBERGER, PE  
(972) 442-7459

#### LANDSCAPE PLAN

ANGEL PARKWAY PET HOSPITAL

LOT 1, BLOCK A - ANGEL ADDITION

LUCAS, TEXAS

#### SHARP LANDSCAPES

1129 HUNTINGTON DRIVE • RICHARDSON, TEXAS 75060  
BILL SHARP - 972-976-6172

DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
HELM.	CADD	JANUARY 2016	1"=20'	LBORDER	1548	L1





Item No. 03

**City of Lucas**  
**Planning & Zoning Agenda Request**  
**October 13, 2016**

Requester: Development Services Director Joe Hilbourn

**Agenda Item:**

Discuss and give staff direction regarding updates to the Comprehensive Plan, Chapter 8 – Water and Sewer, including the Sewer Master Plan Map.

**Background Information:**

The Comprehensive Plan should be updated periodically to reflect changes in the community. The last update to the Comprehensive Plan was conducted in 2006. The City had its Comprehensive Plan kick off meeting that included the Planning and Zoning Commission, City Council and the Parks and Open Space Board on June 7, 2015 and the Planning and Zoning Commission has begun their review and update of components of the Comprehensive Plan. The items to be considered for update include Chapter 8 - Water and Sewer, which include a Water System Master Plan Map and a Sewer Master Plan Map. This is a technical review only.

**Citizen Summary:**

There is no state law that requires a City to have a Comprehensive Plan; however, if a City would like to enforce zoning it is required to have an adopted Comprehensive Plan that is updated from time to time. The Comprehensive Plan is a long-range planning tool that is intended to be used by the City to guide growth and development of the community for the future. The Comprehensive Plan was adopted in 1980 and as the City grows, the Plan needs periodic updating, the last update was 2004. The goal of this update is to continue to make long-range plans for the community of Lucas as it continues to grow. At this time the Comprehensive Plan has been brought before the Planning and Zoning Commission as a standing item each month. The Comprehensive Plan is required to be adopted following two public hearings. Public hearings for adoption of the amended Comprehensive Plan are tentatively scheduled for January or February, 2017.

**Attachments/Supporting Documentation:**

1. Chapter 8 of the City's Comprehensive Plan
2. Approved Sewer Master Plan Map

**Budget/Financial Impact:**

NA

**Recommendation:**

NA

**Motion:**

NA

## CHAPTER 8 - WATER SYSTEM

### INTRODUCTION

The City of Lucas owns and operates the ~~water system~~ Lucas Waterworks that serves the ~~City's~~ residents inside and outside its current Certificate of Convenience and Necessity (CCN) cite map. The Lucas Waterworks serves residents outside the city limits and outside the Lucas extraterritorial jurisdiction (ETJ), but the City does not supply water to all residence within the Lucas ETJ. The Seis Lagos Utility District, the Wylie Northeast Special Utility District and the City of Allen supply water to inside the Lucas city limits and within the Lucas ETJ. ~~The water system serves all of the City's residents except for the residents on Fair Brook Circle and the residents along the north/south part of Rock Ridge Road. The water system also serves residents in the City's ETJ areas except for those in the large ETJ area located in the southeast part of the City (which includes Seis Lagos, Brockdale Estates, and Inspiration). Also, the City's water system serves a small part of the City of Allen's ETJ located on the northwest side of Lucas (adjacent to the northernmost part of Rock Ridge Road).~~

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The City's water system is a vital part of the ~~City's~~ City owned infrastructure. The purpose of this section on the water system is to update the ~~City's~~ Comprehensive Plan by providing a description of the ~~City's~~ current water system, identifying the criteria for determining future additions to the water system, and providing a description of the capital improvements needed for the future water system.

### EXISTING WATER SYSTEM

#### Water Supply

The City purchases water from ~~'s water supply is provided by~~ the North Texas Municipal Water District (NTMWD). Water is delivered to the City's ~~system~~ at two delivery points. One of the delivery points is at the North Pump Station site located on Country Club Road ~~(FM 1378)~~ between West Lucas Road and Estates Parkway. The other delivery site is at the McGarity Pump Station site located on McGarity Lane just east of ~~FM 2554~~ Angle Parkway. The delivery point at the

CHAPTER 8 - WATER SYSTEM

McGarity Pump Station site is the newer of the two delivery sites. ~~It was~~ established when the first facilities were constructed at that site in 2004/2005.

**Existing System Facilities**

The principal facilities in the existing water system include ground storage tanks, elevated storage tanks, and pump stations. The storage tanks and pump station are all located at the McGarity Pump Station ~~site~~ and the North Pump Station ~~site~~ except for the Winningkoff elevated tank site. The existing water system is shown on Figure 8.1 ~~(Existing water system) included~~ at the end of this section. Following is a summary of the principal facilities in the existing water system:

Ground Storage:

McGarity <del>P.S. Site</del> Pump Station	200,000 gallon tank
	350,000 gallon tank
North <del>P.S. Site</del> Pump Station	500,000 gallon tank
	750,000 gallon tank
Total	1,800,000 gallons

Elevated Storage:

McGarity <del>P.S. Site</del> Pump Station	300,000 gallon tank
Winningkoff Site	300,000 gallon tank
Total	600,000 gallons

Pumping Facilities:

McGarity <del>P.S. Site</del> Pump Station	<del>Pump #1 – 750 gpm</del>
	<del>Pump #2 – 750 gpm</del>
	Pump #3 – 750 gpm



## CHAPTER 8 - WATER SYSTEM

	Pump #4 – 750 gpm
	Pump #5 – 750 gpm
North <del>P.S. Site</del> <u>Pump Station</u>	Pump #1 – 1,100 gpm
	Pump #2 – 1,000 gpm
	Pump #3 – 1,000 gpm
Total	<del>6,850</del> <u>5,250</u> gpm

### New Facilities

A number of facilities have been added to the existing water system since the last comprehensive plan was prepared in 2004. These facilities include the initial McGarity Pump Station ~~Site~~ facilities which were under construction at the time of the preparation of the last comprehensive plan. Those facilities include the 300,000 gallon elevated storage tank, the 200,000 gallon ground storage tank, and the pump station with the first two 750 gpm pumps. Other facilities that have been added to the water system include the following:

#### Ground Storage:

750,000 gallon ground storage tank at the North ~~P.S. site~~Pump Station

350,000 gallon ground storage tank at the McGarity ~~P.S. site~~Pump Station

#### Pumping Facilities:

Replacement of 900 gpm pump with 1,100 gpm pump at the North ~~P.S. site~~Pump Station

New pump station at the McGarity ~~P.S. site~~Pump Station with two 750 gpm pumps

Additional 750 gpm pump ~~in the new pump station~~ at the McGarity ~~P.S. site~~Pump Station

#### Water Lines:

## CHAPTER 8 - WATER SYSTEM

Country Club Road Water Line, including 9,200 feet of ~~16"-~~ and 12"-inch water lines

Forest Grove Road Water Line, including 1,000 feet of ~~8"-eight-inch~~ water line

Shady Lane Water Line including 2,200 feet of ~~8"-eight-inch~~ water line

Southview Drive Water Line, including 12,000 feet of ~~42"12-inch~~ water line

Brockdale Park Road Water Line, including 7,000 feet of ~~8"-eight-inch~~ water line

Brookhaven Drive Water Line, including 6,300 feet of ~~8"-eight-inch~~ water line

Stinson Road Water Line, including 11,700 feet of ~~42"12-inch~~ water line

Water line to the fire station, including 320 feet of ~~42"12-inch~~ water line

Rock Ridge Road Water Line Phase I, including 3,500 feet of ~~42"12-inch~~ water line

Osage Lane Water Line, including 2,700 feet of ~~6"-six-inch~~ water line

### PARAMETERS FOR FUTURE FACILITIES

Typically, the two principal factors that determine the size and capacity of future water system facilities are the anticipated water demand in the water system and certain facilities design criteria. In the case of the Lucas water system, three other factors will also have an impact on the future water system facilities. These factors are the pending conversion of the water system from two pressure planes to one pressure plane, staging the additions to the water system to account for ~~Developmentdevelopment~~, ~~and~~ the need to reduce the number of dead end water lines in the system, ~~and the ability of the NTMWD to supply water~~.

#### Water Demand

Water demand is a function of the number of people living in the service area and their water usage habits. Projected population for the ~~water City and the City's ETJ~~ ~~arecustomers is~~ included in ~~the following table~~Table 2.3 in Section 2.:

## CHAPTER 8 - WATER SYSTEM

[Add table here](#)

~~The City's present water system service area is shown in includes the City, the smaller ETJ areas, and a small area in the City of Allen ETJ. Figure 8.2 shows the service area for the existing water system, and is included at the end of this section.~~

~~Not included in the present service area is the Fair Brook Circle area and part of the area along Rock Ridge Road. It is anticipated for planning purposes that the present water system service area and all of the ETJ areas (including the large ETJ area southeast of the City) and the Fair Brook Circle area and Rock Ridge Road area will eventually be included in the City's water system service area. A map showing the service area for the future water system is included at the end of this section.~~

Based on this approach, the population to be served by the City's water system will include the build out population of 16,876 shown in Table 2.3 in Section 2xxxxx shown in the Table x.x plus an estimated population of 168 people in the Allen ETJ being served by the City's water system. Accordingly, a total population of of13,442???? located within the city's proposed CCN (cite map) people will be utilized for determining the water demand that will eventually need to be met by the City's water system. The size and capacity of future system facilities will be based on this population of 13,442?????.

Since water demand in the water system service area is a function of the population in the service area and their water usage habits of the residents, historical water usage habits need to be determined in order to establish the projected demands in the water system. Based on historical water usage habits established in previous analysis, water usage in the City's water system is approximately 250 gallons per capita per day, the maximum day to average day ratio is 2.5, and the peak hour to maximum day ratio is 1.8. With a build out population of 13,442 in the service area, this water usage will result in an average daily demand of 3.36 mgd, a maximum day demand of 8.4 mgd, and a peak hour demand of 15.12 mgd for the water system at build out.

## CHAPTER 8 - WATER SYSTEM

### Design Criteria

Different design criteria can be used to determine the size and capacity needed for future system facilities. Minimum requirements for determining the size of storage facilities and pumping facilities are provided by TCEQ. Per TCEQ, the ~~City's~~ water system needs to have at least 200 gallons of ground storage per connection and 100 gallons of elevated storage per connection. More stringent design criteria have been utilized, per previous analysis, for the ~~City's~~ water system. This design criteria is based on providing elevated storage to meet peak hour demands in the system. Based on this criteria, the elevated storage needs to have enough capacity to provide for peak hour demand with a reserve of one-third of the total elevated storage capacity for fire flow. The ground storage needs to have enough capacity to meet a specified portion of the maximum day demand. The pumping capacity in the system needs to be sufficient to meet a specified portion of the maximum day demand. It is recommended that the more stringent design criteria, which has been used in the past for the existing water system, continue to be utilized for determining the size and capacity of future system facilities.

### Pressure Planes

The existing water system presently operates on two pressure planes. The upper pressure plane is located primarily in the northwest part of the ~~Cityservice area~~. The lower pressure plane serves the rest of the ~~Cityservice area~~. The facilities that provide water to the upper pressure plane are located at the McGarity Pump Station site. The facilities that provide water to the lower pressure plane are located at the North Pump Station site and the Winningkoff Elevated Tank site.

Prior to the establishment of the two pressure planes, the water system was operating on a single pressure plane. One of the goals ~~of the City~~ is to reestablish one pressure plane in order to simplify operation of the water system and improve efficiency ~~of the water system~~. Due to the difference in elevations of the elevated storage tanks serving the existing water system, one strategy is an altitude valve ~~will need to be~~ installed at the Winningkoff elevated storage tank. An altitude valve at the Winningkoff elevated storage tank will allow the two elevated storage tanks to

## CHAPTER 8 - WATER SYSTEM

work together in the water system when it is converted to one pressure plane. Additionally limiting connections between the planes and the installation of residential pressure regulating valves (RPRVs) are other strategies for balancing the planes.

### ETJ Annexation

The areas within the Lucas city's ETJ with the highest potential for annexation are already being served by the city's Lucas waterworks system. However, the large ETJ area in the southeast part of the City is not being served by the city's water system. If this Should this large ETJ area is be added to the City by annexation, and this the area would still not be added to the water system service area. This + these areas are currently located within the CCN held by the Wylie Northeast Special Utility District (WNSUD) and the Seis Lagos Utility District (SLUD). In general terms, the WNSUD supplies water to the southeast corner of the city as well as the Inspiration neighborhood with in the Lucas ETJ and the SLUD supplies the Seis Lagos and Brockdale Park neighborhoods in CCN's controlled by other utility providers Wiley North east for Inspiration and Seis Lagos utility district for Seis Lagos, and Brockdale Estates.

Projected population in this area at build out is 3,892 people. This population would not increase the projected population in the water system service area at build out. The only potential impact to the Lucas waterworks would be the operation of the SLUD water infrastructure is if we chose to include Seis Lagos utility district, the city would utilize existing infrastructure including two existing water towers. The WNSUD would most likely not relinquish is system to the City of Lucas. The only change would be an interconnection between the two systems that may require a pressure reducing valve.

### Dead End Water Lines

There are a large number of dead end water lines in the existing water system. Most of these dead end water lines have been created over the years as a result of expansion of the water system, primarily when subdivisions were built. Several of

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the dead end water lines are long water lines. Dead end water lines have to be periodically flushed per TCEQ requirements in order to keep sufficient disinfection levels in the water lines. The City has to devote resources and funds to accomplish this purpose. It is the City's goal to address this situation and to reduce the number of dead end water lines in the City by adding water lines that will provide loops for the longer dead end water lines. Looping these dead end water lines will eliminate the need to flush the lines, will improve the dependability of the system in the area, and will enhance fire protection, especially where longer dead end lines are looped. Included at the end of this section is a water system map showing the existing dead end water lines.

### PROPOSED WATER SYSTEM

#### Proposed System Facilities

A number of system improvements will need to be made for the future water system based on the future water demand, the design criteria for improvements, and the other criteria mentioned in the previous section. The principal facilities needed for build out conditions in the water system service area (without the large ETJ area in the southeast part of the City included in the service area) include the following. These improvements are shown on Figure 8.3 (The capital improvements map) included at the end of this section.

#### McGarity P.S. Site:

1,000,000 gallon ground storage tank

Pump station with two 1,250 gpm pumps (replaces old pump station)

300,000 gallon elevated storage tank

#### North P.S. Site:

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Replace existing 8" delivery line (from NTMWD) with 12" delivery line

Pump station with two 800 gpm pumps

Winningkoff Elevated Tank Site:

Altitude valve with valve vault and piping

The additional facilities needed for build out conditions in the water system service area (with the large ETJ area in the southeast part of the City included in the service area) include the following. These improvements are shown on Figure 8.4 (the capital improvements map) shown at the end of this section.

McGarity P.S. Site:

Add a third 1,250 gpm pump in the new pump station

200,000 gallon elevated storage tank

North P.S. Site:

800,000 gallon ground storage tank

Add a third 800 gpm pump in the new pump station

Water Lines:

12" water line along Country Club Road and East Lucas Road

12" water line between Brockdale Park Road and Southview Drive

The additions to the water system listed above for both sets of conditions (i.e., with and without the large ETJ area in the southeast part of the City included in the

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service area) provide the facilities that will be needed in the water system under build out conditions and provide a balanced water system with similar capacity facilities at the two pump station sites.



DISCHARGE POINT TO  
THE NTMWD REGIONAL  
SEWER LINE

2551 COMMERCIAL  
AREA

PROPOSED GRAVITY  
SANITARY SEWER

HIGH SCHOOL LIFT  
STATION AND  
FORCE MAIN

LOVEJOY I.S.D.  
HIGH SCHOOL

FORCE MAIN

LIFT STATION

HUNT COMMERCIAL  
AREA

# CITY OF LUCAS WASTEWATER SYSTEM MASTER PLAN

