THE STATE OF TEXAS §
COUNTY OF BRAZORIA §
CITY OF MANVEL §

LARRY AKERY, COUNCIL PLACE 1
LORRAINE HEHN, COUNCIL PLACE 2
NICCOLE TYSON, COUNCIL PLACE 3
DAN DAVIS, COUNCIL PLACE 4
JASON ALBERT, COUNCIL PLACE 5
JEROME HUDSON, COUNCIL PLACE 6

DEBRA DAVISON, MAYOR
KYLE JUNG, CITY MANAGER
TAMMY BELL, CITY SECRETARY

NOTICE OF A CITY COUNCIL MEETING OF THE CITY OF MANVEL
February 22, 2022

NOTICE IS HEREBY GIVEN
6:00 P.M. WORKSHOP
7:00 P.M. REGULAR SESSION

Pursuant to Chapter 551, Title 5 of the Texas Government Code, the Texas Open Meetings Act, notice is hereby given that the City of Manvel will convene a regular meeting at the Manvel City Hall, located at 20031 Hwy 6, Manvel Tx 77578 for the purpose of discussing and if appropriate, take action with respect to the following items:

NOTE: The City Council of the City of Manvel reserves the right to discuss any items in Closed Session whenever authorized under the Texas Open Meetings Act, Chapter 551, of the Texas Government Code. The City Council may discuss the items on this agenda in any order.

This facility is wheelchair accessible and accessible parking spaces are available. Requests for accommodations or interpreter services must be made 48 hours prior to this meeting. Please contact the City Secretary at 281-489-0630 X6 for further information.

Workshop Session

Presentation on the Master Drainage Plan

Discussion on any subject as listed on the Agenda dated February 22, 2022.

Regular Session

Call To Order

Inspirational Reading - Council Member Jason Albert

Pledge

Pledge of Allegiance and Texas Pledge: "Honor the Texas flag; I pledge allegiance to thee Texas, one state under God, one and indivisible.

Citizen Comments: "Comment Card" Required

****Members of the public who wish to submit written comments on a listed agenda item must submit their comments via the Public Comment Request Form found on the city website www.cityofmanvel.com or by emailing thell@cityofmanvel.com or by calling 281-489-0630 x6 for staff assistance.*

Presentation

Proclamation
February 2022-Black History Month

City Manager Update

Update on current events and city issues.

Regular Agenda

1. Consideration and possible action to approve Final Plat for Meridiana Section 52; Being a subdivision of 21.88 acres out of the H.T. & B.R.R. Company Survey, Section 61, Abstract 282, and the Oliver Hall Survey, Abstract 203, City of Manvel, Brazoria County, Texas. (Favorable recommendation by PD&Z FAILED 0/7).

2. Consideration and possible action to approve Final Plat for Meridiana Detention Reserve M-2;
Being a subdivision of 4.644 acres out of the H.T. & B.R.R. Company Survey, Section 61, Abstract 282, and the Oliver Hall Survey, Abstract 203, City of Manvel, Brazoria County, Texas. (Favorable recommendation by PD&Z FAILED 0-7).

3. Consideration and possible action to approve Final Plat for Meridiana Detention Reserve N-2;
Being a subdivision of 7.081 acres out of the H.T. & B.R.R. Company Survey, Section 61, Abstract 282, and the Oliver Hall Survey, Abstract 203, City of Manvel, Brazoria County, Texas. (Favorable recommendation by PD&Z FAILED 0-7)

4. Consideration and possible action to direct staff to provide Applicants written statements of the conditions for any conditional approvals, and the reasons for disapproval of any plans or plats that were not approved, per Texas Local Government Code §212.0091.

5. Consideration and possible action to approve a Subdivision variance request for property located at 6336 Del Bello Spur, seeking to vary Chapter 62, Section 62-111, Additional Street Requirements and authorize the Mayor to execute the Development Agreement.

6. Consideration and possible action to approve the first of two readings of Ordinance 2022-O-06;
AN ORDINANCE OF THE CITY OF MANVEL, TEXAS, AMENDING CHAPTER 50. *PLANNING AND DEVELOPMENT*, ARTICLE III. *COMPREHENSIVE PLAN*, BY APPROVING THE 2022 MASTER WATER PLAN UPDATE DOCUMENT AS THE 2022 MASTER WATER PLAN; AMENDING SECTION 50-54. *MASTER WATER PLAN* INTEGRATING THE CITY'S 2022 MASTER WATER PLAN INTO THE CITY'S COMPREHENSIVE PLANS; PROVIDING FOR CONFORMITY OF ALL REGULATIONS TO THE MASTER WATER PLAN; PROVIDING A PENALTY IN AN AMOUNT NOT TO EXCEED $2,000.00 PER DAY FOR EACH DAY OF VIOLATION OF ANY PROVISION HEREOF; AND PROVIDING FOR SEVERABILITY; AND PROVIDING A SEVERANCE CLAUSE AND EFFECTIVE DATE.

7. Consideration and possible action on the appointments of the Manvel Economic Development Corporation Board positions #1, #2, and #3 with a term to expire in March 2024.

8. Consideration and possible action on the appointments of the Manvel Planning Development and Zoning Commission positions #5, #6, and #7 with a term to expire in March 2024.

9. Consideration and possible action to direct staff on the proposed amendments to Code of Ordinances ARTICLE IX. NOISE REGULATION.

10. Consideration and possible action to direct staff on the following items as requested by Council Member Albert;

    a. Status of open positions and option to engage an outside recruitment agency to find Fire Marshals and or other open city positions.
    b. Discussion on open police department positions and possible action to define recruit and retain police department recruiter(s) FTE(s) position(s).
    c. Discussion and possible action on the effectiveness of HR and HR related activities.
    d. Discussion and possible action on multiple reports of staff failures to engage city customers, including but not limited to updates on Michael Johnson's repeated complaints of lack of enforcement actions.
    e. Discussion and possible action on the status of the salary survey and employee engagement survey. (Direction was given to staff in September).

Consent Agenda

All Consent Agenda items listed are considered to be routine by the City Council and will be approved by one motion. There will be no separate discussion of these items unless a City Council Member so requests, in which event the item will be removed from the Consent Agenda and considered in sequence on the Agenda.

1. Approve Final Plat for Meridiana Detention Reserve V Phase 2;
   Being a subdivision of 1.074 acres out of the H.T. & B.R.R. Company Survey, Section 61, Abstract 282, and the Oliver Hall Survey, Abstract 203, City of Manvel, Brazoria County, Texas. (Favorable recommendation by PD&Z 7-0)

2. Approve Final Plat of Meridiana Elementary School Site No. 2;
   Being a subdivision of 13.00 acres out the Oliver Hall Survey, Abstract 203, City of Manvel, Brazoria County, Texas. (Favorable recommendation by PD&Z 7-0)

3. Approve second and final reading of Ordinance 2022-O-03;
   AN ORDINANCE OF THE CITY OF MANVEL, TEXAS, AMENDING THE ZONING ORDINANCE OF THE CITY, BY AMENDING THE ZONING CLASSIFICATION OF 21,000 SQUARE FEET LOCATED AT 7507 MASTERS ROAD, MANVEL, TEXAS, FROM LIGHT COMMERCIAL DISTRICT/STATE HIGHWAY 6 OVERLAY DISTRICT (LC/SH6) TO LIGHT COMMERCIAL DISTRICT/STATE HIGHWAY 6 OVERLAY DISTRICT WITH SPECIFIC USE PERMIT LC/SH6-SUP); PROVIDING FOR THE GRANTING OF A SPECIFIC USE PERMIT WITH CONDITIONS TO AUTHORIZE THE USE OF PROPERTY FOR NAICS USE 621111 "OFFICES OF PHYSICIANS (EXCEPT MENTAL HEALTH SPECIALISTS)"; PROVIDING FOR THE AMENDMENT OF THE CITY'S OFFICIAL ZONING MAP; PROVIDING SEVERABILITY; AND PROVIDING A PENALTY IN AN AMOUNT NOT TO EXCEED $2,000 FOR EACH DAY OF VIOLATION OF ANY
   PROVISION HEREOF. (Forwarded with favorable recommendation with conditions by PD&Z with a 4/1 vote)

4. Approve second and final reading of Ordinance 2022-O-05;
   AN ORDINANCE OF THE CITY OF MANVEL, TEXAS, AMENDING CHAPTER 50. *PLANNING AND DEVELOPMENT*, ARTICLE III. *COMPREHENSIVE PLAN*, BY APPROVING THE 2022 MASTER WASTEWATER PLAN UPDATE DOCUMENT AS THE 2022 MASTER WASTEWATER PLAN; AMENDING SECTION 50-55. *MASTER WASTEWATER PLAN* INTEGRATING THE CITY'S 2022 MASTER WASTEWATER PLAN INTO THE CITY'S COMPREHENSIVE PLANS; PROVIDING FOR CONFORMITY OF ALL WASTEWATER REGULATIONS TO THE MASTER WASTEWATER PLAN; PROVIDING A PENALTY IN AN AMOUNT NOT TO EXCEED $2,000.00 PER DAY FOR EACH DAY OF VIOLATION OF ANY PROVISION HEREOF; AND PROVIDING FOR SEVERABILITY; AND PROVIDING A SEVERANCE CLAUSE AND EFFECTIVE DATE.

5. Acceptance of the meeting minutes to date.

Executive Session

City Council will convene into Executive Session pursuant to Texas Government Code, Sec. 551.074. "Personnel Matters - to deliberate the appointment, employment, evaluation, and duties of a public officer or employee".

Kyle J. Jung, City Manager

Mayor and Council Comments

Update on current events and city issues.
Additionally, pursuant to Texas Government Code § 551.0415, City Council Members and city staff may make a report about items of community interest during a meeting of the governing body without having given notice of the report.
Items of community interest include:

- Expressions of thanks, congratulations, or condolence;
- Information regarding holiday schedules;
- An honorary or salutary recognition of a public official, public employee, or other citizen, except that a discussion regarding a change in the status of a person's public office or public employment is not an honorary or salutary recognition for purposes of this subdivision;
- A reminder about an upcoming event organized or sponsored by the governing body;
- Information regarding a social, ceremonial, or community event organized or sponsored by an entity other than the governing body that was attended or is scheduled to be attended by a member of the governing body or an official or employee of the municipality; and
- Announcements involving an imminent threat to the public health and safety of people in the municipality that has arisen after the posting of the agenda.

Adjourn

CERTIFICATION

I, Tammy Bell, City Secretary for the City of Manvel, do hereby certify that the foregoing Agenda of the City of Manvel is true and correct; and that I posted such notice on the bulletin board at the Manvel City Hall. A place convenient and readily accessible to the public on 2/18/2022 in accordance with the Texas Open Meetings Act (Tex. Gov't. Code §551.001 et.seq). Said notice remained posted for at least 72 hours preceding the scheduled time of the meeting.

TAMMY BELL, CITY SECRETARY
CITY OF MANVEL, TEXAS

Proclamation

OFFICE OF THE MAYOR
CITY OF MANVEL

Whereas, Carter G. Woodson, known as the "father of the Black History" created the celebration of Black accomplishment in 1926; and

Whereas, Carter G. Woodson placed Black History month in February because it originally coincides with the birthdates of both Abraham Lincoln and Fredrick Douglas; and

Whereas, Carter G. Woodson recognized the impact and the power that comes from knowing and furthering the causes of what our "forebears have accomplished"; and

Whereas, Black History Month was first recognized nationally by President Gerald Ford in 1976; and

Whereas, President Gerald Ford urged Americans to "seize the opportunity to honor the too-often neglected accomplishments of Black Americans in every area of endeavor throughout our history"; and

Whereas, in 1986, Congress passed "National Black History Month" into law with the goal of bring awareness to the Black struggle for freedom; and

Whereas, now, celebrating Black History is not just an acknowledgement of the past, but a commitment to the future. Black history is American history; and

Whereas, the 2022 Black History Month's theme is Black Health and Wellness. This focus will celebrate the contributions and breakthroughs of Black professionals as well as speaking to the cultural richness of those "non-traditional" health and wellness practitioners; and

Now, Therefore, I, Lorraine Hehn, by virtue of the authority vested in me as Mayor Pro-Tem of the City of Manvel, Texas, do hereby proclaim February 2022 as

"Black History Month"

in the City of Manvel, Texas,

In witness thereof, I have hereunto set my hand and caused the seal of the City of Manvel to be affixed.

_____

Lorraine Hehn, Mayor Pro-Tem
February 22, 2022

DEVELOPMENT SERVICES DEPARTMENT
20025 HIGHWAY 6
MANVEL, TX 77578
281-489-0630

Planning, Development and Zoning Commission Plat Report

Plat Name	Meridiana Section 52 Final Plat
Applicant	Lacey Bell, EHRA
PD&Z Meeting Date	February 14, 2022
Recommendation	Denial
Submitted By	Kwasi Bosompem, City Planner

Background

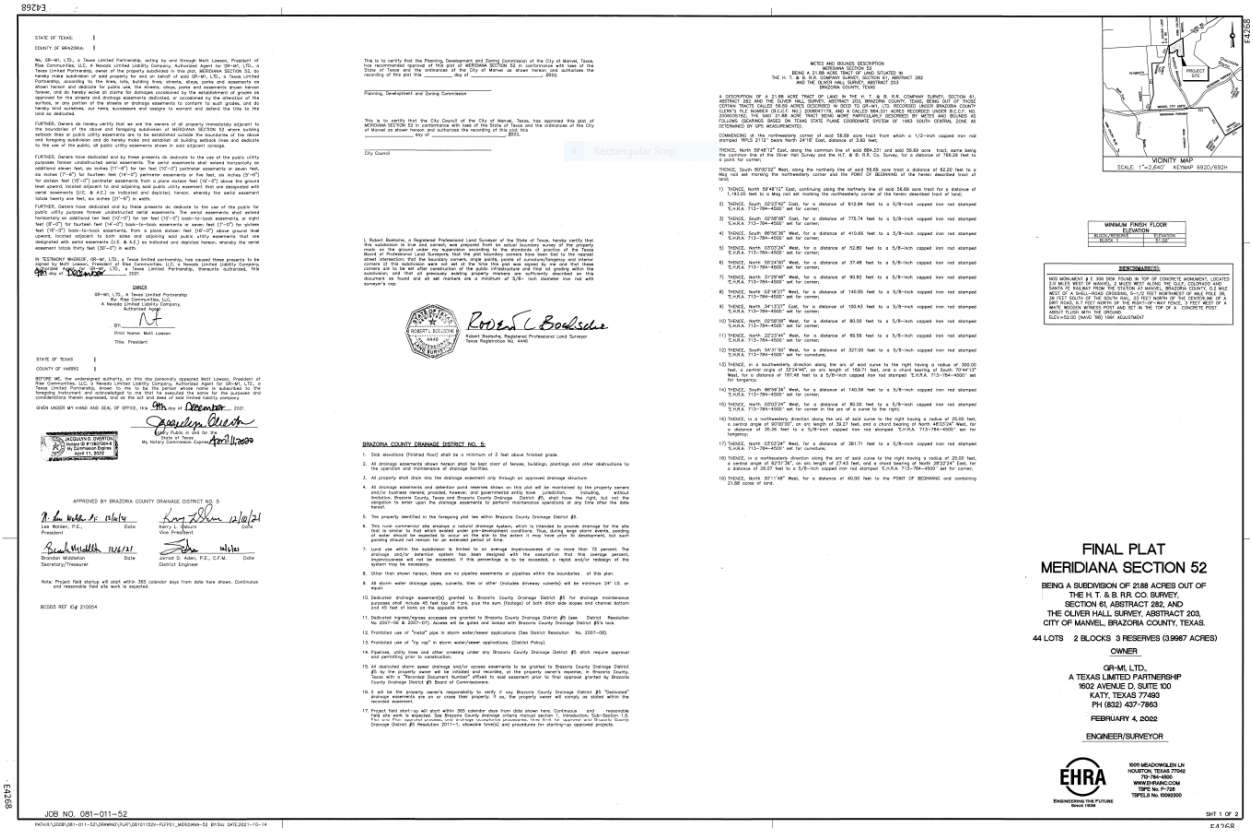
The applicant requested a 30-day plat extension on January 14, 2022, in order to address comments. Staff did not recommend approval of the 30-day plat extension request because Meridiana Section 52 Final Plat takes access from Meridiana Pursley Boulevard Phase 7 Final Plat. The Meridiana Pursley Boulevard Phase 7 Final Plat was not approved by City Council at their January 18, 2022, meeting. The Meridiana Pursley Boulevard Phase 7 Final Plat does not have approved construction plans. Construction plan comments were issued to staff in November 2021 and have not been resubmitted since. The Developer is working with the County to address comments regarding roadway intersection configuration at Pursley Boulevard and Clark Road. The Planning, Development and Zoning Commission did not recommend approval of the requested 30-day plat extension on January 24, 2022, meeting and the City Council did not approve the plat on February 7, 2022. The applicant has resubmitted this final plat for consideration again. All comments have been addressed except one, which is plat access. The Meridiana Section 52 Final Plat takes access from Meridiana Pursely Boulevard Phase 7 Final Plat. To date, the construction plans for Meridiana Pursely Boulevard Phase 7 Final Plat have not been approved nor the final plat.

Staff Recommendation

The City staff recommends denial of the Meridiana Section 52 Final Plat. This final plat does not meet the following criteria:

1. Plat cannot be approved without approval of Meridiana Pursley Boulevard Phase 7 Final Plat (Section 62-108 and Section 62-41 (b) (31)).

Plat Exhibit



FINAL PLAT
MERIDIANA SECTION 52

BEING A SUBDIVISION OF 21.88 ACRES OUT OF THE H. T. & B. R.R. CO. SURVEY, SECTION 61, ABSTRACT 282, AND THE OLIVER HALL SURVEY, ABSTRACT 203, CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

44 LOTS 2 BLOCKS 3 RESERVES (3.9987 ACRES)

OWNER

GR-ML LTD.,
A TEXAS LIMITED PARTNERSHIP
1602 AVENUE D, SUITE 100
KATY, TEXAS 77493
PH (832) 437-7863

FEBRUARY 4, 2022

ENGINEER/SURVEYOR

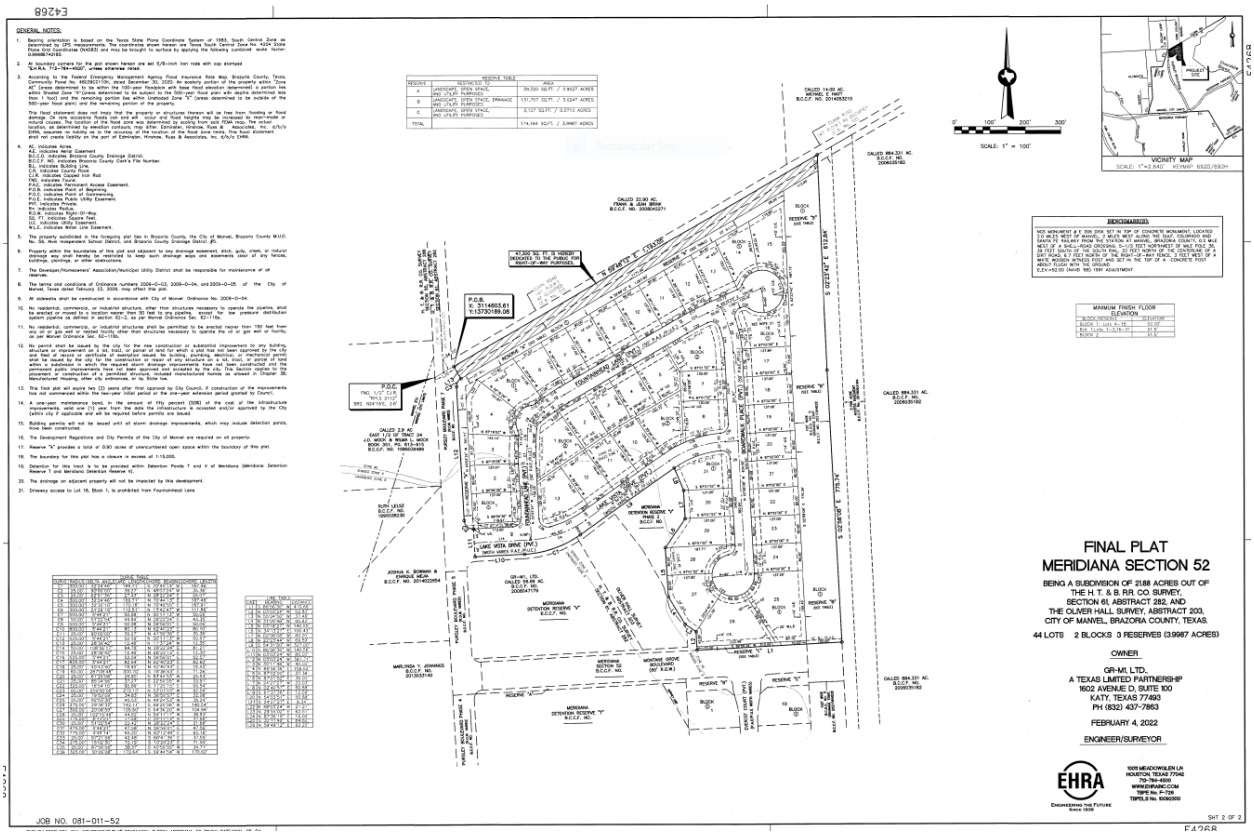
EHRA
ENGINEERING FOR THE FUTURE
Since 1938
1001 MEADOWGLEN LN
HOUSTON, TEXAS 77042
(713) 784-4500
WWW.EHRAINC.COM
TBPE No. F-726
TBPELS No. 10093300

JOB NO. 081-011-52

SHT 1 OF 2

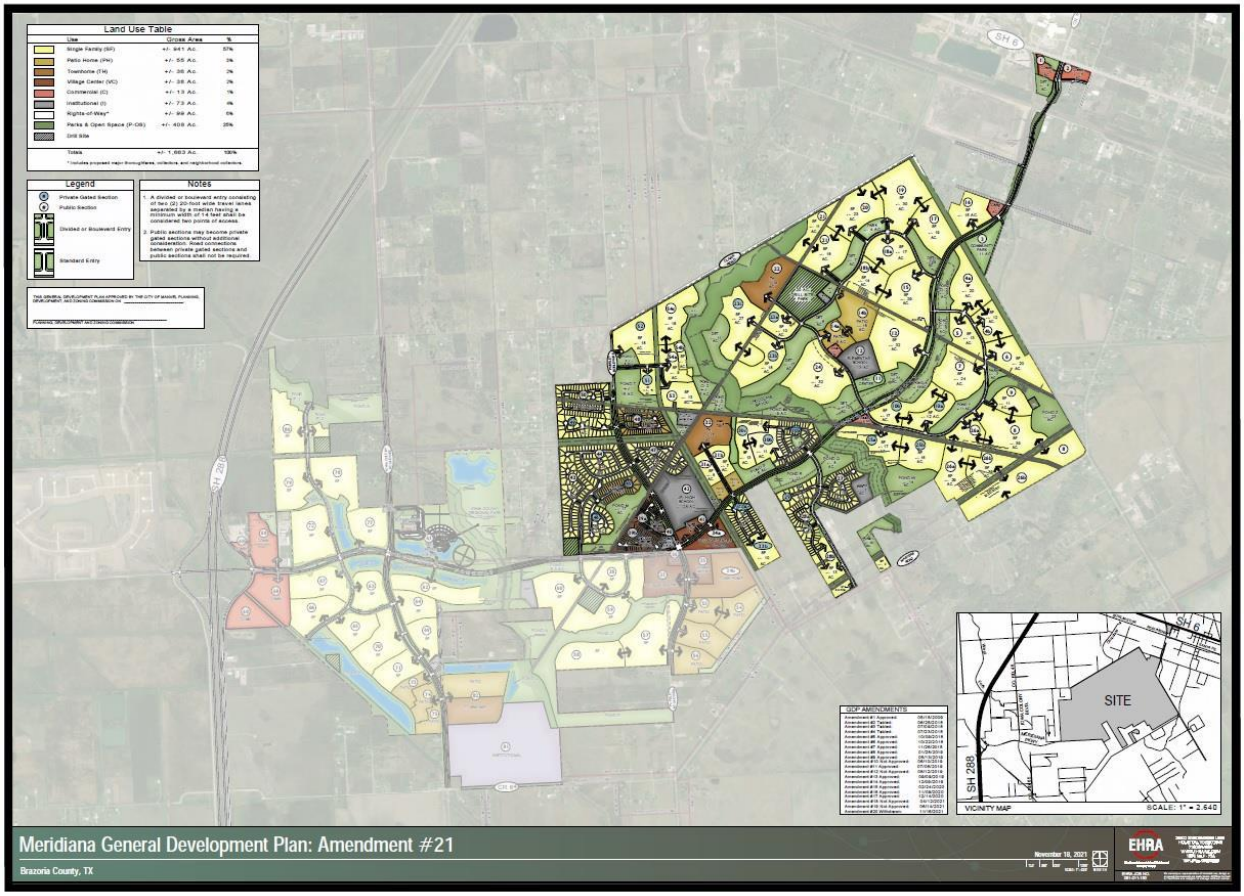
Development Services Department
20025 Highway 6
Manvel, TX 77578
281-489-0630

Plat Exhibit



DEVELOPMENT SERVICES DEPARTMENT
20025 HIGHWAY 6
MANVEL, TX 77578
281-489-0630

Meridiana General Development Plan Amendment No. 21 (dated November 19, 2021)



E4268

STATE OF TEXAS §

COUNTY OF BRAZORIA: §

We, GR-M1, LTD., a Texas Limited Partnership, acting by and through Matt Lawson, President of Rise Communities, LLC, A Nevada Limited Liability Company, Authorized Agent for GR-M1, LTD., a Texas Limited Partnership, owner of the property subdivided in this plat, MERIDIANA SECTION 52, do hereby make subdivision of said property for and on behalf of said GR-M1, LTD., a Texas Limited Partnership, according to the lines, lots, building lines, streets, alleys, parks and easements as shown hereon and dedicate for public use, the streets, alleys, parks and easements shown hereon forever, and do hereby waive all claims for damages occasioned by the establishment of grades as approved for the streets and drainage easements dedicated, or occasioned by the alteration of the surface, or any portion of the streets or drainage easements to conform to such grades, and do hereby bind ourselves, our heirs, successors and assigns to warrant and defend the title to the land so dedicated.

FURTHER, Owners do hereby certify that we are the owners of all property immediately adjacent to the boundaries of the above and foregoing subdivision of MERIDIANA SECTION 52 where building setback lines or public utility easements are to be established outside the boundaries of the above and foregoing subdivision and do hereby make and establish all building setback lines and dedicate to the use of the public, all public utility easements shown in said adjacent acreage.

FURTHER, Owners have dedicated and by these presents do dedicate to the use of the public utility purposes forever unobstructed aerial easements. The aerial easements shall extend horizontally an additional eleven feet, six inches (11'–6") for ten feet (10'–0") perimeter easements or seven feet, six inches (7'–6") for fourteen feet (14'–0") perimeter easements or five feet, six inches (5'–6") for sixteen feet (16'–0") perimeter easements from a plane sixteen feet (16'–0") above the ground level upward, located adjacent to and adjoining said public utility easement that are designated with aerial easements (U.E. & A.E.) as indicated and depicted, hereon, whereby the aerial easement totals twenty one feet, six inches (21'–6") in width.

FURTHER, Owners have dedicated and by these presents do dedicate to the use of the public for public utility purpose forever unobstructed aerial easements. The aerial easements shall extend horizontally an additional ten feet (10'–0") for ten feet (10'–0") back–to–back easements, or eight feet (8'–0") for fourteen feet (14'–0") back–to–back easements or seven feet (7'–0") for sixteen feet (16'–0") back–to–back easements, from a plane sixteen feet (16'–0") above ground level upward, located adjacent to both sides and adjoining said public utility easements that are designated with aerial easements (U.E. & A.E.) as indicated and depicted hereon, whereby the aerial easement totals thirty feet (30'–0") in width.

IN TESTIMONY WHEREOF, GR–M1, LTD., a Texas limited partnership, has caused these presents to be signed by Matt Lawson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR–M1, LTD., a Texas Limited Partnership, thereunto authorized, this 9th day of December, 2021.

OWNER

GR–M1, LTD., A Texas Limited Partnership
By: Rise Communities, LLC,
A Nevada Limited Liability Company,
Authorized Agent

BY:_____

Print Name: Matt Lawson

Title: President

STATE OF TEXAS §

COUNTY OF HARRIS §

BEFORE ME, the undersigned authority, on this day personally appeared Matt Lawson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR–M1, LTD., a Texas Limited Partnership, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and considerations therein expressed, and as the act and deed of said limited liability company.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 9th day of December 2021.

Notary Public in and for the
State of Texas
My Notary Commission Expires: April 11, 2022

JACQULYN D. OVERTON
Notary ID #12807204-8
My Commission Expires
April 11, 2022

APPROVED BY BRAZORIA COUNTY DRAINAGE DISTRICT NO. 5

Lee Walden, P.E., President — Date 12/6/21

Kerry L. Osburn, Vice President — Date 12/10/21

Brandon Middleton, Secretary/Treasurer — Date 12/6/21

Jarrod D. Aden, P.E., C.F.M., District Engineer — Date 12/6/21

Note: Project field startup will start within 365 calendar days from date here shown. Continuous and reasonable field site work is expected.

BCDD5 REF ID# 210054

This is to certify that the Planning, Development and Zoning Commission of the City of Manvel, Texas, has recommended approval of this plat of MERIDIANA SECTION 52 in conformance with laws of the State of Texas and the ordinances of the City of Manvel as shown hereon and authorizes the recording of this plat this _____ day of _____, 2022.

Planning, Development and Zoning Commission

This is to certify that the City Council of the City of Manvel, Texas, has approved this plat of MERIDIANA SECTION 52 in conformance with laws of the State of Texas and the ordinances of the City of Manvel as shown hereon and authorizes the recording of this plat this _____ day of _____, 2022.

City Council

I, Robert Boelsche, a Registered Professional Land Surveyor of the State of Texas, hereby certify that this subdivision is true and correct; was prepared from an actual boundary survey of the property made on the ground under my supervision according to the standards of practice of the Texas Board of Professional Land Surveyors; that the plat boundary corners have been tied to the nearest street intersection; that the boundary corners, angle points, points of curvature/tangency and interior corners of this subdivision were not set at the time this plat was signed by me and that these corners are to be set after construction of the public infrastructure and final lot grading within the subdivision; and that all previously existing property markers are sufficiently described on this document as found and all set markers are a minimum of 5/8– inch diameter iron rod with surveyor's cap.

STATE OF TEXAS — REGISTERED — ROBERT L BOELSCHE — 4446 — PROFESSIONAL LAND SURVEYOR

Robert Boelsche, Registered Professional Land Surveyor
Texas Registration No. 4446

BRAZORIA COUNTY DRAINAGE DISTRICT NO. 5:

1. Slab elevations (finished floor) shall be a minimum of 2 feet above finished grade.
2. All drainage easements shown hereon shall be kept clear of fences, buildings, plantings and other obstructions to the operation and maintenance of drainage facilities.
3. All property shall drain into the drainage easement only through an approved drainage structure.
4. All drainage easements and detention pond reserves shown on this plat will be maintained by the property owners and/or business owners; provided, however, and governmental entity have jurisdiction, including, without limitation, Brazoria County, Texas and Brazoria County Drainage District #5, shall have the right, but not the obligation to enter upon the drainage easements to perform maintenance operations at any time after the date hereof.
5. The property identified in the foregoing plat lies within Brazoria County Drainage District #5.
6. This rural commercial site employs a natural drainage system, which is intended to provide drainage for the site that is similar to that which existed under pre–development conditions. Thus, during large storm events, ponding of water should be expected to occur on the site to the extent it may have prior to development, but such ponding should not remain for an extended period of time.
7. Land use within the subdivision is limited to an average imperviousness of no more than 72 percent. The drainage and/or detention system has been designed with the assumption that this average percent, imperviousness will not be exceeded. If this percentage is to be exceeded, a replat and/or redesign of the system may be necessary.
8. Other than shown hereon, there are no pipeline easements or pipelines within the boundaries of this plan.
9. All storm water drainage pipes, culverts, tiles or other (includes driveway culverts) will be minimum 24" I.D. or equal.
10. Dedicated drainage easement(s) granted to Brazoria County Drainage District #5 for drainage maintenance purposes shall include 45 feet top of bank, plus the sum (footage) of both ditch side slopes and channel bottom and 45 feet of bank on the opposite bank.
11. Dedicated ingress/egress accesses are granted to Brazoria County Drainage District #5 (see District Resolution No 2007–06 & 2007–07). Access will be gated and locked with Brazoria County Drainage District #5's lock.
12. Prohibited use of "metal" pipe in storm water/sewer applications (See District Resolution No. 2007–08).
13. Prohibited use of "rip rap" in storm water/sewer applications. (District Policy).
14. Pipelines, utility lines and other crossing under any Brazoria County Drainage District #5 ditch require approval and permitting prior to construction.
15. All dedicated storm sewer drainage and/or access easements to be granted to Brazoria County Drainage District #5 by the property owner will be initiated and recorded, at the property owner's expense, in Brazoria County, Texas with a "Recorded Document Number" affixed to said easement prior to final approval granted by Brazoria County Drainage District #5 Board of Commissioners.
16. It will be the property owner's responsibility to verify if any Brazoria County Drainage District #5 "Dedicated" drainage easements are on or cross their property. If so, the property owner will comply as stated within the recorded easement.
17. Project field start–up will start within 365 calendar days from date shown here. Continuous and reasonable field site work is expected. See Brazoria County drainage criteria manual section 1, Introduction; Sub–Section 1.5. Plat and Plan approval process, and drainage acceptance procedures; time limit for approval and Brazoria County Drainage District #5 Resolution 2011–1, allowable time(s) and procedures for starting–up approved projects.

METES AND BOUNDS DESCRIPTION
MERIDIANA SECTION 52
BEING A 21.88 ACRE TRACT OF LAND SITUATED IN
THE H. T. & B. R.R. COMPANY SURVEY, SECTION 61, ABSTRACT 282
AND THE OLIVER HALL SURVEY, ABSTRACT 203
BRAZORIA COUNTY, TEXAS

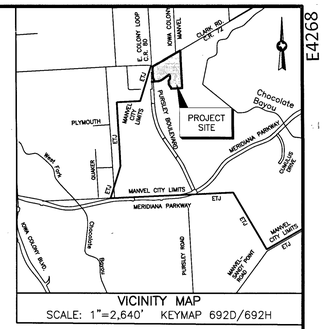
A DESCRIPTION OF A 21.88 ACRE TRACT OF LAND IN THE H. T. & B. R.R. COMPANY SURVEY, SECTION 61, ABSTRACT 282 AND THE OLIVER HALL SURVEY, ABSTRACT 203, BRAZORIA COUNTY, TEXAS, BEING OUT OF THOSE CERTAIN TRACTS CALLED 56.69 ACRES DESCRIBED IN DEED TO GR–M1, LTD. RECORDED UNDER BRAZORIA COUNTY CLERK'S FILE NUMBER (B.C.C.F. NO.) 2008047179, AND A CALLED 884.331 ACRES RECORDED UNDER B.C.C.F. NO. 2006035182; THE SAID 21.88 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS (BEARINGS BASED ON TEXAS STATE PLANE COORDINATE SYSTEM OF 1983 SOUTH CENTRAL ZONE AS DETERMINED BY GPS MEASUREMENTS):

COMMENCING at the northwesterly corner of said 56.69 acre tract from which a 1/2–inch capped iron rod stamped "RPLS 2112" bears North 24°18' East, distance of 3.60 feet;

THENCE, North 59°48'12" East, along the common line of said 884.331 and said 56.69 acre tract, same being the common line of the Oliver Hall Survey and the H.T. & B. R.R. Co. Survey, for a distance of 766.29 feet to a point for corner;

THENCE, South 60°00'02" West, along the northerly line of said 56.69 acre tract a distance of 62.20 feet to a Mag nail set marking the northwesterly corner and the POINT OF BEGINNING of the herein described tract of land;

1) THENCE, North 59°48'12" East, continuing along the northerly line of said 56.69 acre tract for a distance of 1,193.05 feet to a Mag nail set marking the northeasterly corner of the herein described tract of land;
2) THENCE, South 02°23'42" East, for a distance of 612.84 feet to a 5/8–inch capped iron rod stamped "E.H.R.A. 713–784–4500" set for corner;
3) THENCE, South 02°58'08" East, for a distance of 775.74 feet to a 5/8–inch capped iron rod stamped "E.H.R.A. 713–784–4500" set for corner;
4) THENCE, South 86°56'36" West, for a distance of 410.66 feet to a 5/8–inch capped iron rod stamped "E.H.R.A. 713–784–4500" set for corner;
5) THENCE, North 03°03'24" West, for a distance of 52.80 feet to a 5/8–inch capped iron rod stamped "E.H.R.A. 713–784–4500" set for corner;
6) THENCE, North 55°24'50" West, for a distance of 37.48 feet to a 5/8–inch capped iron rod stamped "E.H.R.A. 713–784–4500" set for corner;
7) THENCE, North 31°29'48" West, for a distance of 90.92 feet to a 5/8–inch capped iron rod stamped "E.H.R.A. 713–784–4500" set for corner;
8) THENCE, North 03°18'27" West, for a distance of 140.55 feet to a 5/8–inch capped iron rod stamped "E.H.R.A. 713–784–4500" set for corner;
9) THENCE, North 34°13'27" East, for a distance of 100.43 feet to a 5/8–inch capped iron rod stamped "E.H.R.A. 713–784–4500" set for corner;
10) THENCE, North 02°58'08" West, for a distance of 80.00 feet to a 5/8–inch capped iron rod stamped "E.H.R.A. 713–784–4500" set for corner;
11) THENCE, North 22°23'44" West, for a distance of 69.59 feet to a 5/8–inch capped iron rod stamped "E.H.R.A. 713–784–4500" set for corner;
12) THENCE, South 54°31'50" West, for a distance of 327.00 feet to a 5/8–inch capped iron rod stamped "E.H.R.A. 713–784–4500" set for curvature;
13) THENCE, in a southwesterly direction along the arc of said curve to the right having a radius of 300.00 feet, a central angle of 32°24'46", an arc length of 169.71 feet, and a chord bearing of South 70°44'13" West, for a distance of 167.46 feet to a 5/8–inch capped iron rod stamped "E.H.R.A. 713–784–4500" set for tangency;
14) THENCE, South 86°56'36" West, for a distance of 140.56 feet to a 5/8–inch capped iron rod stamped "E.H.R.A. 713–784–4500" set for corner;
15) THENCE, North 03°03'24" West, for a distance of 80.00 feet to a 5/8–inch capped iron rod stamped "E.H.R.A. 713–784–4500" set for corner in the arc of a curve to the right;
16) THENCE, in a northwesterly direction along the arc of said curve to the right having a radius of 25.00 feet, a central angle of 90°00'00", an arc length of 39.27 feet, and a chord bearing of North 48°03'24" West, for a distance of 35.36 feet to a 5/8–inch capped iron rod stamped "E.H.R.A. 713–784–4500" set for tangency;
17) THENCE, North 03°03'24" West, for a distance of 381.71 feet to a 5/8–inch capped iron rod stamped "E.H.R.A. 713–784–4500" set for curvature;
18) THENCE, in a northeasterly direction along the arc of said curve to the right having a radius of 25.00 feet, a central angle of 62°51'36", an arc length of 27.43 feet, and a chord bearing of North 28°22'24" East, for a distance of 26.07 feet to a 5/8–inch capped iron rod stamped "E.H.R.A. 713–784–4500" set for corner;
19) THENCE, North 30°11'48" West, for a distance of 40.00 feet to the POINT OF BEGINNING and containing 21.88 acres of land.



VICINITY MAP
SCALE: 1"=2,640' KEYMAP 692D/692H

MINIMUM FINISH FLOOR ELEVATION	
BLOCK/RESERVE	ELEVATION
BLOCK 1	51.00'

BENCHMARK(S):

NGS MONUMENT # E 306 DISK FOUND IN TOP OF CONCRETE MONUMENT, LOCATED 2.0 MILES WEST OF MANVEL, 2 MILES WEST ALONG THE GULF, COLORADO AND SANTA FE RAILWAY FROM THE STATION AT MANVEL, BRAZORIA COUNTY, 0.2 MILE WEST OF A SHELL–ROAD CROSSING, 5–1/2 FEET NORTHWEST OF MILE POLE 38, 39 FEET SOUTH OF THE SOUTH RAIL, 33 FEET NORTH OF THE CENTERLINE OF A DIRT ROAD, 6.7 FEET NORTH OF THE RIGHT–OF–WAY FENCE, 3 FEET WEST OF A WHITE WOODEN WITNESS POST AND SET IN THE TOP OF A CONCRETE POST ABOUT FLUSH WITH THE GROUND.
ELEV.=52.00 (NAVD '88) 1991 ADJUSTMENT

FINAL PLAT
MERIDIANA SECTION 52

BEING A SUBDIVISION OF 21.88 ACRES OUT OF
THE H. T. & B. R.R. CO. SURVEY,
SECTION 61, ABSTRACT 282, AND
THE OLIVER HALL SURVEY, ABSTRACT 203,
CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

44 LOTS 2 BLOCKS 3 RESERVES (3.9987 ACRES)

OWNER

GR–M1, LTD.,
A TEXAS LIMITED PARTNERSHIP
1602 AVENUE D, SUITE 100
KATY, TEXAS 77493
PH (832) 437–7863

FEBRUARY 4, 2022

ENGINEER/SURVEYOR

EHRA
ENGINEERING THE FUTURE SINCE 1936
10011 MEADOWGLEN LN
HOUSTON, TEXAS 77042
713–784–4500
WWW.EHRAINC.COM
TBPE No. F–726
TBPELS No. 10092300

JOB NO. 081–011–52

SHT 1 OF 2

PATH:R:\2008\081–011–52\DRAWING\PLAT\08101152V–PLFP01_MERIDIANA–52 BY:SVJ DATE:2021–10–14

E4268

E4268

GENERAL NOTES:

1. Bearing orientation is based on the Texas State Plane Coordinate System of 1983, South Central Zone as determined by GPS measurements. The coordinates shown hereon are Texas South Central Zone No. 4204 State Plane Grid Coordinates (NAD83) and may be brought to surface by applying the following combined scale factor: 0.99986742185.

2. All boundary corners for the plat shown hereon are set 5/8-inch iron rods with cap stamped "E.H.R.A. 713-784-4500", unless otherwise noted.

3. According to the Federal Emergency Management Agency Flood Insurance Rate Map, Brazoria County, Texas, Community Panel No. 48039C0110K, dated December 30, 2020. An easterly portion of the property within "Zone AE" (areas determined to be within the 100-year floodplain with base flood elevation determined) a portion lies within Shaded Zone "X" (areas determined to be subject to the 500-year flood plain with depths determined less than 1 foot) and the remaining portion lies within Unshaded Zone "X" (areas determined to be outside of the 500-year flood plain) and the remaining portion of the property.

   This flood statement does not imply that the property or structures thereon will be free from flooding or flood damage. On rare occasions floods can and will occur and flood heights may be increased by man-made or natural causes. The location of the flood zone was determined by scaling from said FEMA map. The actual location, as determined by elevation contours, may differ. Edminster, Hinshaw, Russ & Associates, Inc. d/b/a EHRA, assumes no liability as to the accuracy of the location of the flood zone limits. This flood statement shall not create liability on the part of Edminster, Hinshaw, Russ & Associates, Inc. d/b/a EHRA.

4. AC. indicates Acres.
   A.E. indicates Aerial Easement
   B.C.C.D. indicates Brazoria County Drainage District.
   B.C.C.F. NO. indicates Brazoria County Clerk's File Number.
   B.L. indicates Building Line.
   C.R. indicates County Road.
   C.I.R. indicates Capped Iron Rod
   FND. indicates Found.
   P.A.E. indicates Permanent Access Easement.
   P.O.B. indicates Point of Beginning.
   P.O.C. indicates Point of Commencing.
   P.U.E. indicates Public Utility Easement.
   PVT. indicates Private.
   R= indicates Radius.
   R.O.W. indicates Right-Of-Way.
   SQ. FT. indicates Square Feet.
   U.E. indicates Utility Easement.
   W.L.E. indicates Water Line Easement.

5. The property subdivided in the foregoing plat lies in Brazoria County, the City of Manvel, Brazoria County M.U.D. No. 56, Alvin Incependent School District, and Brazoria County Drainage District #5.

6. Property within the boundaries of this plat and adjacent to any drainage easement, ditch, gully, creek, or natural drainage way shall hereby be restricted to keep such drainage ways and easements clear of any fences, buildings, plantings, or other obstructions.

7. The Developer/Homeowners' Association/Municipal Utility District shall be responsible for maintenance of all reserves.

8. The terms and conditions of Ordinance numbers 2009-0-03, 2009-0-04, and 2009-0-05 of the City of Manvel, Texas dated February 23, 2009, may affect this plat.

9. All sidewalks shall be constructed in accordance with City of Manvel Ordinance No. 2009-0-04.

10. No residential, commercial, or industrial structure, other than structures necessary to operate the pipeline, shall be erected or moved to a location nearer than 50 feet to any pipeline, except for low pressure distribution system pipeline as defined in section 62-2, as per Manvel Ordinance Sec. 62-116a.

11. No residential, commercial, or industrial structures shall be permitted to be erected nearer than 150 feet from any oil or gas well or related facility other than structures necessary to operate the oil or gas well or facility, as per Manvel Ordinance Sec. 62-116b.

12. No permit shall be issued by the city for the new construction or substantial improvement to any building, structure or improvement on a lot, tract, or parcel of land for which a plat has not been approved by the city and filed of record or certificate of exemption issued. No building, plumbing, electrical, or mechanical permit shall be issued by the city for the construction or repair of any structure on a lot, tract, or parcel of land within a subdivision in which the required storm drainage improvements have not been constructed and the permanent public improvements have not been approved and accepted by the city. This Section applies to the placement or construction of a permitted structure, included manufactured homes as allowed in Chapter 38, Manufactured Housing, other city ordinances, or by State law.

13. This final plat will expire two (2) years after final approval by City Council, if construction of the improvements has not commenced within the two-year initial period or the one-year extension period granted by Council.

14. A one-year maintenance bond, in the amount of fifty percent (50%) of the cost of the infrastructure improvements, valid one (1) year from the date the infrastructure is accepted and/or approved by the City (within city if applicable and will be required before permits are issued.

15. Building permits will not be issued until all storm drainage improvements, which may include detention ponds, hove been constructed.

16. The Development Regulations and City Permits of the City of Manvel are required on all property.

17. Reserve "A" provides a total of 0.90 acres of unencumbered open space within the boundary of this plat.

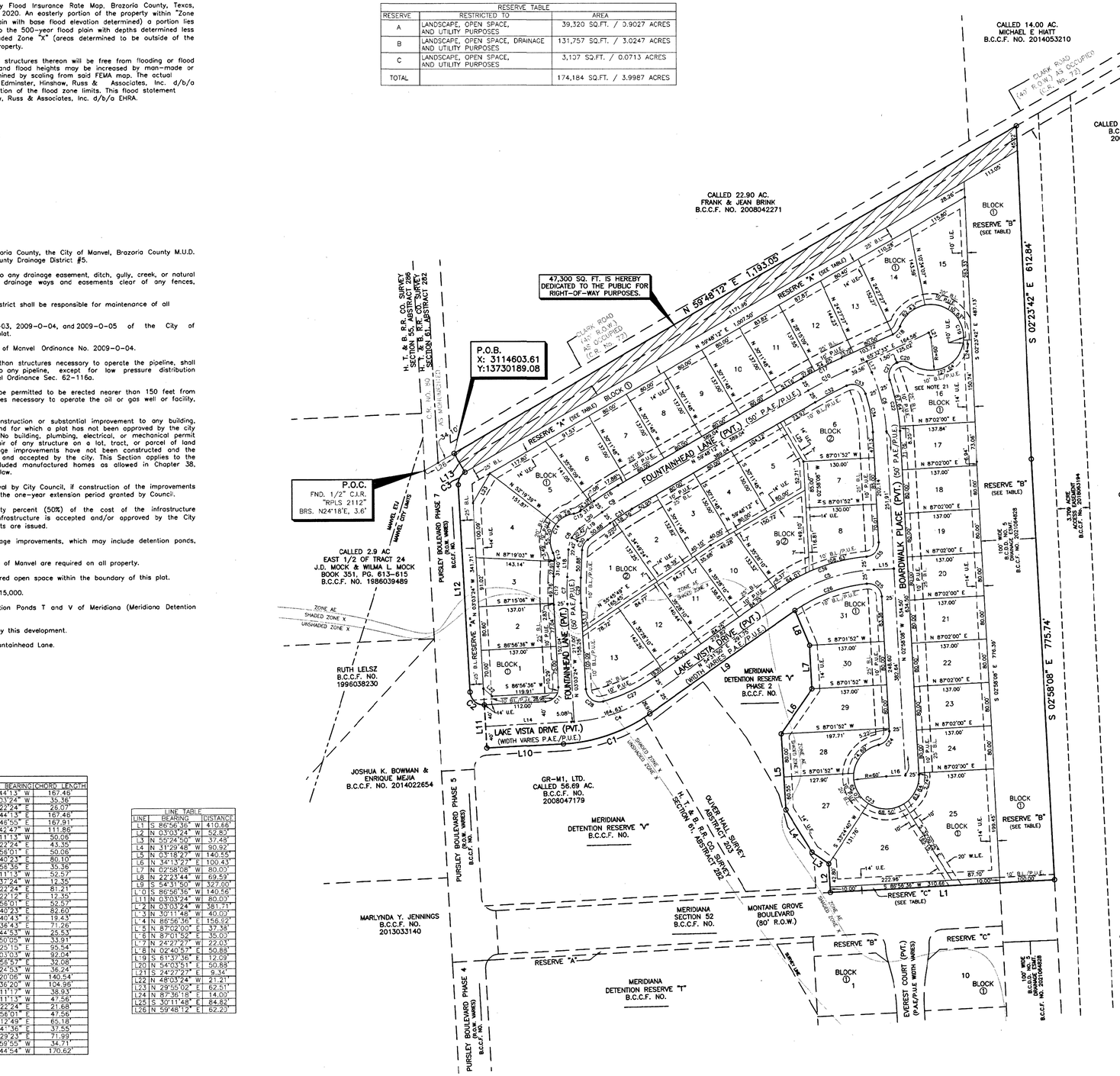
18. The boundary for this plat has a closure in excess of 1:15,000.

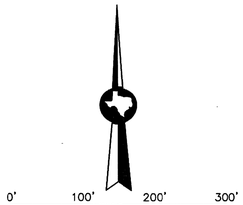
19. Detention for this tract is to be provided within Detention Ponds T and V of Meridiana (Meridiana Detention Reserve T and Meridiana Detention Reserve V).

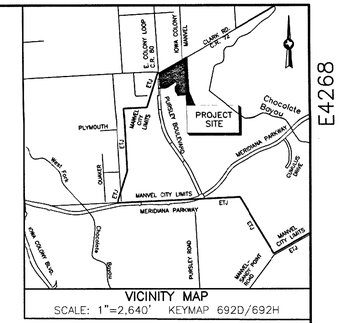
20. The drainage on adjacent property will not be impacted by this development.

21. Driveway access to Lot 16, Block 1, is prohibited from Fountainhead Lane.

RESERVE TABLE		
RESERVE	RESTRICTED TO	AREA
A	LANDSCAPE, OPEN SPACE, AND UTILITY PURPOSES	39,320 SQ.FT. / 0.9027 ACRES
B	LANDSCAPE, OPEN SPACE, DRAINAGE AND UTILITY PURPOSES	131,757 SQ.FT. / 3.0247 ACRES
C	LANDSCAPE, OPEN SPACE, AND UTILITY PURPOSES	3,107 SQ.FT. / 0.0713 ACRES
TOTAL		174,184 SQ.FT. / 3.9987 ACRES







VICINITY MAP
SCALE: 1"=2,640' KEYMAP 692D/692H

BENCHMARK(S):

NGS MONUMENT # E 306 DISK SET IN TOP OF CONCRETE MONUMENT, LOCATED 2.0 MILES WEST OF MANVEL, 2 MILES WEST ALONG THE GULF, COLORADO AND SANTA FE RAILWAY FROM THE STATION AT MANVEL, BRAZORIA COUNTY, 0.2 MILE WEST OF A SHELL-ROAD CROSSING, 5-1/2 FEET NORTHWEST OF MILE POLE 38, 39 FEET SOUTH OF THE SOUTH RAIL, 33 FEET NORTH OF THE CENTERLINE OF A DIRT ROAD, 6.7 FEET NORTH OF THE RIGHT-OF-WAY FENCE, 3 FEET WEST OF A WHITE WOODEN WITNESS POST AND SET IN THE TOP OF A CONCRETE POST ABOUT FLUSH WITH THE GROUND.
ELEV.=52.00 (NAVD '88) 1991 ADJUSTMENT

MINIMUM FINISH FLOOR ELEVATION	
BLOCK/RESERVE	ELEVATION
BLOCK 1: Lots 4-15	52.00'
BLK 1:Lots 1-3,16-31	51.5'
BLOCK 2	51.5'

CURVE TABLE					
CURVE	RADIUS	DELTA ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	300.00'	32°24'46"	169.71'	S 70°44'13" W	167.46'
C2	25.00'	90°00'00"	39.27'	N 48°03'24" W	35.36'
C3	25.00'	62°51'36"	27.43'	N 28°22'24" E	26.07'
C4	300.00'	32°24'46"	169.71'	N 70°44'13" E	167.46'
C5	300.00'	32°30'10"	170.18'	N 70°46'55" E	167.91'
C6	300.00'	21°29'19"	112.51'	N 13°42'47" W	111.86'
C7	500.00'	5°44'21"	50.08'	N 00°11'13" W	50.06'
C8	50.00'	51°22'54"	44.84'	N 28°22'24" E	43.35'
C9	500.00'	5°44'21"	50.08'	N 56°58'01" E	50.06'
C10	800.00'	5°44'21"	80.13'	N 62°40'23" E	80.10'
C11	25.00'	90°00'00"	39.27'	N 41°56'36" E	35.36'
C12	525.00'	5°44'21"	52.59'	N 00°11'13" W	52.57'
C13	25.00'	28°36'42"	12.48'	N 11°37'24" W	12.35'
C14	50.00'	108°36'17"	94.78'	N 28°22'24" E	81.21'
C15	25.00'	28°36'42"	12.48'	N 68°22'12" E	12.35'
C16	525.00'	5°44'21"	52.59'	N 56°58'01" E	52.57'
C17	825.00'	5°44'21"	82.64'	N 62°40'23" E	82.60'
C18	25.00'	45°43'40"	19.95'	N 42°40'43" E	19.43'
C19	60.00'	287°08'48"	300.70'	S 18°36'43" E	71.26'
C20	25.00'	61°25'08"	26.80'	N 83°44'53" W	25.53'
C21	25.00'	85°24'56"	37.27'	S 22°50'05" W	33.91'
C22	325.00'	16°54'15"	95.89'	S 11°25'15" E	95.54'
C23	60.00'	259°50'09"	272.10'	N 53°03'03" W	92.04'
C24	25.00'	79°50'09"	34.83'	N 36°56'57" E	32.08'
C25	25.00'	92°53'30"	40.53'	N 49°24'53" W	36.24'
C26	275.00'	29°36'32"	142.11'	S 69°20'06" W	140.54'
C27	300.00'	20°08'59"	105.50'	S 64°36'20" W	104.96'
C28	25.00'	102°15'46"	44.62'	N 54°11'17" W	38.93'
C29	475.00'	5°44'21"	47.58'	N 00°11'13" W	47.56'
C30	25.00'	51°22'54"	22.42'	N 28°22'24" E	21.68'
C31	475.00'	5°44'21"	47.58'	N 56°56'01" E	47.56'
C32	775.00'	4°49'14"	65.20'	N 62°12'49" E	65.18'
C33	25.00'	97°21'56"	42.48'	S 66°41'36" E	37.55'
C34	275.00'	15°02'30"	72.19'	S 10°29'23" E	71.99'
C35	25.00'	87°56'06"	38.37'	S 40°59'55" W	34.71'
C36	325.00'	30°26'08"	172.64'	S 69°44'54" W	170.62'

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 86°56'36" W	410.66'
L2	N 03°03'24" W	52.80'
L3	N 59°24'50" W	37.48'
L4	N 31°29'48" W	90.92'
L5	N 03°18'27" W	140.55'
L6	N 34°13'27" E	100.43'
L7	N 02°58'08" W	80.03'
L8	N 22°23'44" W	69.59'
L9	S 54°31'50" W	327.00'
L10	S 86°56'36" W	140.56'
L11	N 03°03'24" W	80.03'
L12	N 03°03'24" W	381.71'
L13	N 30°11'48" W	40.00'
L14	N 86°56'36" E	156.22'
L15	N 87°01'52" E	37.35'
L16	N 24°27'27" W	22.03'
L17	N 02°40'57" E	50.88'
L19	S 61°37'36" E	12.09'
L20	N 54°03'51" E	50.88'
L21	S 24°27'27" E	9.34'
L22	N 48°03'24" W	21.21'
L23	N 29°55'02" E	52.51'
L24	N 87°36'18" E	14.00'
L25	S 30°11'48" E	84.82'
L26	N 59°48'12" E	62.29'

FINAL PLAT
MERIDIANA SECTION 52

BEING A SUBDIVISION OF 21.88 ACRES OUT OF THE H. T. & B. R.R. CO. SURVEY, SECTION 61, ABSTRACT 282, AND THE OLIVER HALL SURVEY, ABSTRACT 203, CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

44 LOTS 2 BLOCKS 3 RESERVES (3.9987 ACRES)

OWNER

GR-M1, LTD.,
A TEXAS LIMITED PARTNERSHIP
1602 AVENUE D, SUITE 100
KATY, TEXAS 77493
PH (832) 437-7863

FEBRUARY 4, 2022

ENGINEER/SURVEYOR

EHRA
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10011 MEADOWGLEN LN
HOUSTON, TEXAS 77042
713-784-4500
WWW.EHRAINC.COM
TBPE No. F-726
TBPELS No. 10092300

JOB NO. 081-011-52

SHT 2 OF 2

PATH:R:\2008\081-011-52\DRAWING\PLAT\08101152V-PLFP01_MERIDIANA-52 BY:SVJ DATE:2021-05-04

E4268

Land Use Table

Use	Gross Area	%
Single Family (SF)	+/- 941 Ac.	57%
Patio Home (PH)	+/- 55 Ac.	3%
Townhome (TH)	+/- 36 Ac.	2%
Village Center (VC)	+/- 38 Ac.	2%
Commercial (C)	+/- 13 Ac.	1%
Institutional (I)	+/- 73 Ac.	4%
Rights-of-Way*	+/- 99 Ac.	6%
Parks & Open Space (P-OS)	+/- 408 Ac.	25%
Drill Site		
Totals	+/- 1,663 Ac.	100%

* Includes proposed major thoroughfares, collectors, and neighborhood collectors.

Legend

- (#) Private Gated Section
- (#) Public Section
- Divided or Boulevard Entry (See Note 1)
- Standard Entry (See Note 2)

Notes

1. A divided or boulevard entry consisting of two (2) 20-foot wide travel lanes separated by a median having a minimum width of 14 feet shall be considered two points of access.
2. A standard entry is the right-of-way width determined by Table 2 (Page 17) or as otherwise stated in the adopted O-PUD document.
3. Public sections may become private gated sections without additional consideration. Road connections between private gated sections and public sections shall not be required. This note shall not apply to Section 20 and Section 26 as identified on this document.
4. The Clark Road ingress/egress from Section 20 and S Masters Road ingress/egress from Section 26B shall maintain a minimum public right-of-way width of 60-feet with no parking.

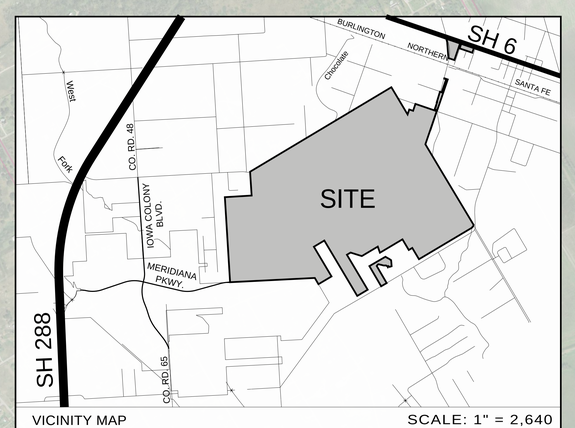
THIS GENERAL DEVELOPMENT PLAN APPROVED BY THE CITY OF MANVEL PLANNING, DEVELOPMENT, AND ZONING COMMISSION ON _____.

_____
PLANNING, DEVELOPMENT AND ZONING COMMISSION

SH 6
SH 288
CR 64
Kruger Road
Jordan Road
CLARK ROAD
MASTERS ROAD
MERIDIANA PARKWAY
CHOCOLATE BAYOU
IOWA COLONY CITY LIMIT
IOWA COLONY REGIONAL PARK 102.1 AC.
ELEMENTARY SCHOOL 15 AC.
REC. CENTER 4.6 AC.
JR. HIGH SCHOOL 28 AC.
ELEMENTARY SCHOOL 13 AC.
20 AC. DRILL SITE/ PARK
VILLAGE CENTER 10 AC.
INSTITUTIONAL
TOWNHOME
TH
PATIO
COMM.
PARK
DET.
LIFT STATION
WWTP
POND A
POND B
POND C
POND D
POND E
POND F-1
POND F-2
POND G
POND H
POND I
POND J
POND K
POND L 8.0 AC.
POND M 17 AC.
POND N
POND O
POND P
POND Q 8 AC.
POND R 11 AC.
POND T +/- 15 AC.
POND V +/- 4 AC.
POND W 14 AC.
POND X 13 AC.
POND Y 11 AC.
POND Z 23 AC.
POND N-2 +/- 4 AC.
POND O-2 +/- 5 AC.
POND C-2 5 AC.
POND D-2 8 AC.
POND #9 9 AC.
POND S 6 AC.
MUD NO. 54 WATER PLANT +/- 2 AC.
MUD NO. 54 WATER PLANT +/- 1 AC.
SF
COMM
PATIO
TOWNHOME
INSTITUTIONAL

GDP AMENDMENTS

Amendment #1 Approved:	05/18/2009
Amendment #2 Tabled:	06/25/2018
Amendment #3 Tabled:	07/09/2018
Amendment #4 Tabled:	07/23/2018
Amendment #5 Approved:	10/09/2018
Amendment #6 Approved:	10/22/2018
Amendment #7 Approved:	11/26/2018
Amendment #8 Approved:	01/28/2019
Amendment #9 Approved:	05/13/2019
Amendment #10 Not Approved:	06/10/2019
Amendment #11 Approved:	07/08/2019
Amendment #12 Not Approved:	08/12/2019
Amendment #13 Approved:	09/09/2019
Amendment #14 Approved:	12/09/2019
Amendment #15 Approved:	02/24/2020
Amendment #16 Approved:	11/09/2020
Amendment #17 Approved:	12/14/2020
Amendment #18 Not Approved:	04/12/2021
Amendment #19 Not Approved:	06/14/2021
Amendment #20 Withdrawn:	11/16/2021



VICINITY MAP SCALE: 1" = 2,640

Meridiana General Development Plan: Amendment #21

Brazoria County, TX

November 19, 2021

150' 300' 600' 1200'
SCALE: 1"=600' NORTH

EHRA
ENGINEERING THE FUTURE SINCE 1936
10011 MEADOWGLEN LANE
HOUSTON, TEXAS 77042
713.784.4500
WWW.EHRAINC.COM
TBPE No. F- 726
TBPLS No. 10092300

EHRA JOB NO. 081-011-150

No warranty or representation of intended use, design or proposed improvements are made herein. All Plans for land or facilities are subject to change without notice.

City of Manvel

P. O. Box 187
20025 HWY 6
Manvel, Texas 77578

(281) 489-0630
Fax (281) 489-0634

AGENDA REQUEST

REQUEST MUST BE MADE ACCORDING TO THE SUBMITTAL SCHEDULE

Meeting Requested: (Please check applicable meeting)

Planning, Development & Zoning			City Council			Both	☒	

Date of Request: February 14, 2022 & February 22, 2022

YOUR REQUEST WILL BE PLACED ON THE NEXT AVAILABLE MEETING DATE. MEETINGS ARE SECOND AND FOURTH MONDAYS FOR PLANNING, DEVELOPMENT & ZONING AND FIRST AND THIRD MONDAYS FOR CITY COUNCIL. THE AGENDAS ARE POSTED TO THE GENERAL PUBLIC AT MANVEL CITY HALL AND ON OUR WEBSITE AT www.cityofmanvel.com. THE AGENDA IS POSTED AND WILL REMAIN POSTED CONTINOUSLY FOR AT LEAST 72 HOURS PRECEDING THE SCHEDULED TIME OF THE MEETING. PLEASE CHECK THE BOARD FOR YOUR MEETING SCHEDULE. WE STRONGLY ENCOURAGE YOU TO ATTEND THE MEETING FOR QUESTIONS AND ANSWERS. IF YOU ARE UNABLE TO ATTEND ACTION MAY BE TABLED UNTIL THE FOLLOWING MEETING.

Person to Speak: Jared Bowling or Brad Sweitzer

Daytime Phone: 713-784-4500 Fax Number: 713-784-4577

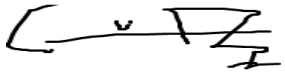
E-mail Address: jbowlin@ehrainc.com or bsweitzer@ehrainc.com

Description of Request and Physical Address:

Consideration and possible action to forward with recommendation to City Council, Final Plat for Meridiana Section 52, being a subdivision of 21.88 acres out of the H.T. & B.R.R. Company Survey, Section 61, Abstract 282, and the Oliver Hall Survey, Abstract 203, City of Manvel, Brazoria County, Texas.

Plats:
Preliminary_____
Final X

ALL DOCUMENTATION AND FEES ASSOCIATED WITH THIS AGENDA REQUEST MUST BE SUBMITTED ACCORDING TO THE MEETING SUBMITTAL SCHEDULE WHICH CAN BE FOUND ON OUR WEBSITE.
BY SIGNING THIS AGENDA REQUEST FORM, I ACKNOWLEDGE THAT I HAVE READ AND UNDERSTAND THIS AGENDA REQUEST FORM.



February 9, 2022

SIGNATURE DATE

City of Manvel

P. O. Box 187
20025 HWY 6
Manvel, Texas 77578

(281) 489-0630
Fax (281) 489-0634

AGENDA REQUEST

REQUEST MUST BE MADE ACCORDING TO THE SUBMITTAL SCHEDULE

Meeting Requested: (Please check applicable meeting)

Planning, Development & Zoning			City Council			Both	☒

Date of Request: February 14, 2022 & February 22, 2022

YOUR REQUEST WILL BE PLACED ON THE NEXT AVAILABLE MEETING DATE. MEETINGS ARE SECOND AND FOURTH MONDAYS FOR PLANNING, DEVELOPMENT & ZONING AND FIRST AND THIRD MONDAYS FOR CITY COUNCIL. THE AGENDAS ARE POSTED TO THE GENERAL PUBLIC AT MANVEL CITY HALL AND ON OUR WEBSITE AT www.cityofmanvel.com. THE AGENDA IS POSTED AND WILL REMAIN POSTED CONTINOUSLY FOR AT LEAST 72 HOURS PRECEDING THE SCHEDULED TIME OF THE MEETING. PLEASE CHECK THE BOARD FOR YOUR MEETING SCHEDULE. WE STRONGLY ENCOURAGE YOU TO ATTEND THE MEETING FOR QUESTIONS AND ANSWERS. IF YOU ARE UNABLE TO ATTEND ACTION MAY BE TABLED UNTIL THE FOLLOWING MEETING.

Person to Speak: Jared Bowlin or Brad Sweitzer

Daytime Phone: 713-784-4500 Fax Number: 713-784-4577

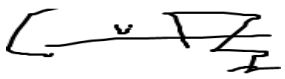
E-mail Address: jbowlin@ehrainc.com or bsweitzer@ehrainc.com

Description of Request and Physical Address:

Consideration and possible action to forward with recommendation to City Council, Final Plat for Meridiana Detention Reserve M-2, being a subdivision of 4.644 acres out of the H.T. & B.R.R. Company Survey, Section 61, Abstract 282, and the Oliver Hall Survey, Abstract 203, City of Manvel, Brazoria County, Texas.

Plats:
Preliminary_____
Final X

ALL DOCUMENTATION AND FEES ASSOCIATED WITH THIS AGENDA REQUEST MUST BE SUBMITTED ACCORDING TO THE MEETING SUBMITTAL SCHEDULE WHICH CAN BE FOUND ON OUR WEBSITE.
BY SIGNING THIS AGENDA REQUEST FORM, I ACKNOWLEDGE THAT I HAVE READ AND UNDERSTAND THIS AGENDA REQUEST FORM.



SIGNATURE

February 9, 2022

DATE

DEVELOPMENT SERVICES DEPARTMENT
20025 HIGHWAY 6
MANVEL, TX 77578
281-489-0630

Planning, Development and Zoning Commission Plat Report

Plat Name	Meridiana Detention Reserve M-2 Final Plat
Applicant	Lacey Bell, EHRA
PD&Z Meeting Date	February 14, 2022
Recommendation	Denial
Submitted By	Kwasi Bosompem, City Planner

Background

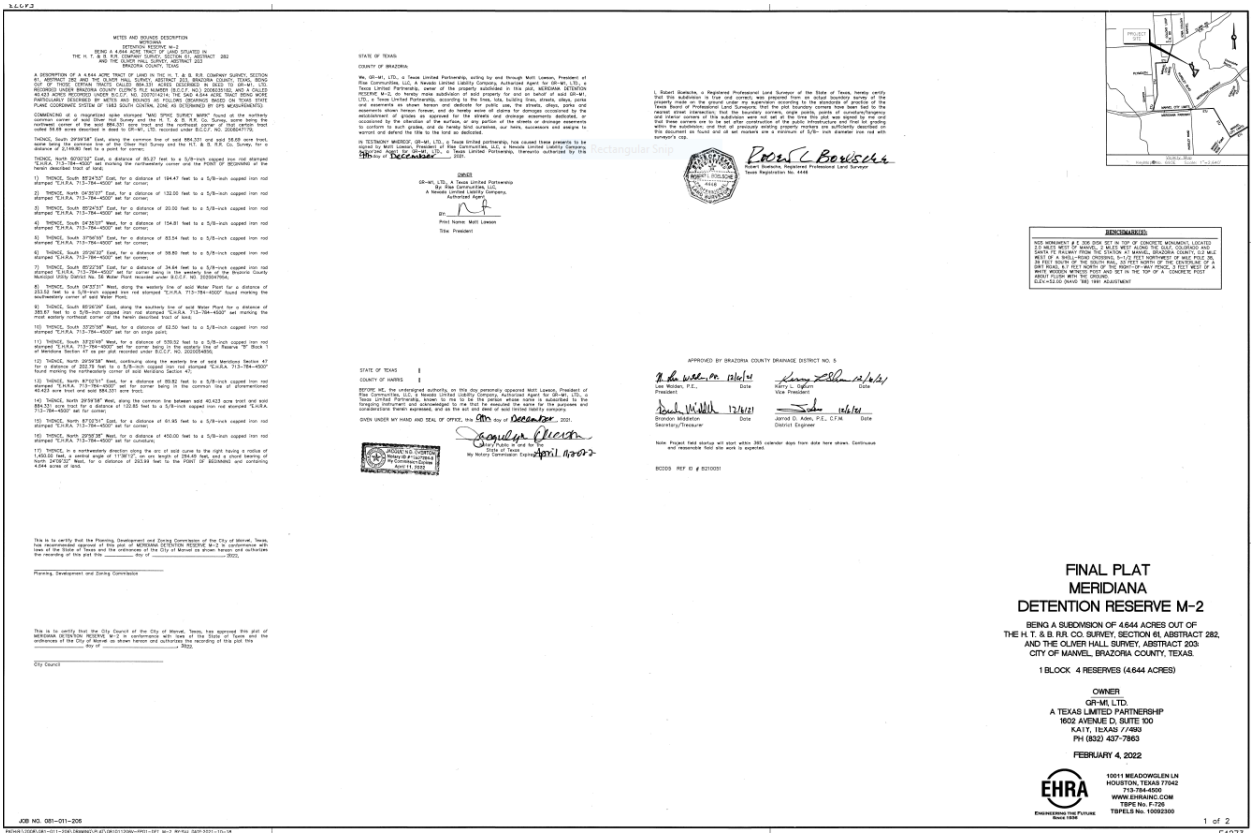
The applicant requested a 30-day plat extension on January 14, 2022, in order to address comments. Staff did not recommend approval of the 30-day plat extension because Meridiana Detention Reserve M-2 Final Plat takes access from Meridiana Section 53 Final Plat and Meridiana Section 54A Final Plat. The applicant has not submitted either Meridiana Section 53 Final Plat and Meridiana Section 54A Final Plat at the previous plat submittal date on January 31, 2022. The Planning, Development and Zoning Commission did not recommend approval of the 30-day plat extension on January 24, 2022, and the City Council did not approve the plat on February 7, 2022. The applicant has resubmitted this final plat for consideration again. All comments have been addressed except one, which is plat access. The Meridiana Detention Reserve M-2 Final Plat takes access from Meridiana Section 54A and Meridiana Section 53. To date, these final plats have not been submitted.

Staff Recommendation

The City staff recommends denial of the Meridiana Detention Reserve M-2 Final Plat. This final plat does not meet the following criteria:

1. Plat cannot be approved without approval of Meridiana Section 53 Final Plat and Meridiana Section 54 Final Plat (Section 62-41 (b) (31) and Section 62-108).

Plat Exhibit



METES AND BOUNDS DESCRIPTION
MERIDIANA
DETENTION RESERVE M-2
BEING A 4.644 ACRE TRACT OF LAND SITUATED IN
THE H. T. & B. R.R. COMPANY SURVEY, SECTION 61, ABSTRACT 282
AND THE OLIVER HALL SURVEY, ABSTRACT 203
BRAZORIA COUNTY, TEXAS

A DESCRIPTION OF A 4.644 ACRE TRACT OF LAND IN THE H. T. & B. R.R. COMPANY SURVEY, SECTION 61, ABSTRACT 282 AND THE OLIVER HALL SURVEY, ABSTRACT 203, BRAZORIA COUNTY, TEXAS; BEING OUT OF THOSE TERRAIN TRACTS CALLED 994.231 ACRES DESCRIBED IN 2022 TO GR-M1, LTD. RECORDED UNDER BRAZORIA COUNTY CLERK'S FILE NUMBER (B.C.C.F. NO.) 2006039182; AND A CALLED 0.0000 ACRE TRACT DESCRIBED IN 2022 TO GR-M1, LTD. RECORDED UNDER B.C.C.F. NO. 2022000000; SAID 4.644 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS (BEARINGS BASED ON TEXAS STATE PLANE COORDINATE SYSTEM OF 1983 SOUTH CENTRAL ZONE AS DETERMINED BY GPS MEASUREMENTS):

COMMENCING at a magnetical spike stamped "BASE STRIKE SURVEY MARK" found at the southerly common corner of said Oliver Hall Survey and the H. T. & B. R.R. Co. Survey, same being the southeasterly corner of the said 994.231 acre tract, and the northeast corner of 2006 called 0.0000 acre tract;

THENCE, South 29°38'58" West, along the common line of said 994.231 and said 0.0000 acre tract, same being the common line of the Oliver Hall Survey and the H.T. & B. R.R. Co. Survey, for a distance of 42.74(RM) feet to a point for corner;

THENCE, North 60°21'02" West, a distance of 85.27 feet to a 5/8-inch capped iron rod stamped "C.H.R.A. 713-784-4500" set marking the northeasterly corner and the POINT OF BEGINNING of the herein described tract of land;

1) THENCE, South 89°24'57" East, for a distance of 194.47 feet to a 5/8-inch capped iron rod stamped "C.H.R.A. 713-784-4500" set for corner;

2) THENCE, North 04°35'03" East, for a distance of 132.00 feet to a 5/8-inch capped iron rod stamped "C.H.R.A. 713-784-4500" set for corner;

3) THENCE, South 89°24'57" East, for a distance of 20.00 feet to a 5/8-inch capped iron rod stamped "C.H.R.A. 713-784-4500" set for corner;

4) THENCE, South 04°35'03" West, for a distance of 154.81 feet to a 5/8-inch capped iron rod stamped "C.H.R.A. 713-784-4500" set for corner;

5) THENCE, South 37°36'56" East, for a distance of 83.54 feet to a 5/8-inch capped iron rod stamped "C.H.R.A. 713-784-4500" set for corner;

6) THENCE, South 29°26'16" East, for a distance of 58.80 feet to a 5/8-inch capped iron rod stamped "C.H.R.A. 713-784-4500" set for corner;

7) THENCE, South 85°22'56" East, for a distance of 34.64 feet to a 5/8-inch capped iron rod stamped "C.H.R.A. 713-784-4500" set for corner being in the westerly line of the Brazoria County Municipal Utility District No. 58 Water Plant recorded under B.C.C.F. NO. 2020004780s;

8) THENCE, South 04°37'31" West, along the westerly line of said Water Plant for a distance of 200.00 feet to a 5/8-inch capped iron rod stamped "C.H.R.A. 713-784-4500" found marking the southwesterly corner of said Water Plant;

9) THENCE, South 85°06'29" East, along the southerly line of said Water Plant for a distance of 355.87 feet to a 5/8-inch capped iron rod stamped "C.H.R.A. 713-784-4500" set marking the most easterly northeast corner of the herein described tract of land;

10) THENCE, South 32°20'56" West, for a distance of 62.50 feet to a 5/8-inch capped iron rod stamped "C.H.R.A. 713-784-4500" set for an angle point;

11) THENCE, South 18°20'56" West, for a distance of 539.52 feet to a 5/8-inch capped iron rod stamped "C.H.R.A. 713-784-4500" set for corner being in the northerly line of Reserve "B" Block 1 of Meridiana Section 47 as per plat recorded under B.C.C.F. NO. 2020054856;

12) THENCE, North 29°54'58" West, continuing along the easterly line of said Meridiana Section 47 for a distance of 203.76 feet to a 5/8-inch capped iron rod stamped "C.H.R.A. 713-784-4500" found marking the northeasterly corner of said Meridiana Section 47;

13) THENCE, North 87°03'51" East, for a distance of 65.82 feet to a 5/8-inch capped iron rod stamped "C.H.R.A. 713-784-4500" set for corner being in the common line of aforementioned 40.423 acre tract and said 994.231 acre tract;

14) THENCE, North 29°54'58" West, along the common line between said 40.423 acre tract and said 994.231 acre tract for a distance of 133.85 feet to a 5/8-inch capped iron rod stamped "C.H.R.A. 713-784-4500" set for corner;

15) THENCE, North 87°03'51" East, for a distance of 61.95 feet to a 5/8-inch capped iron rod stamped "C.H.R.A. 713-784-4500" set for corner;

16) THENCE, North 29°56'36" West, for a distance of 450.00 feet to a 5/8-inch capped iron rod stamped "C.H.R.A. 713-784-4500" set for curvature;

17) THENCE, in a northwesterly direction along the arc of said curve to the right having a radius of 1,400.00 feet, a central angle of 11°36'12", an arc length of 284.49 feet, and a chord bearing of North 24°08'32" West, for a distance of 283.94 feet to the POINT OF BEGINNING and containing 4.644 acres of land.

This is to certify that the Planning, Development and Zoning Commission of the City of Manvel, Texas, has recommended approval of this plat of MERIDIANA DETENTION RESERVE M-2 in conformance with laws of the State of Texas and the ordinances of the City of Manvel as shown hereon and authorizes the recording of this plat this _____ day of _____, 2022.

Planning, Development and Zoning Commission

This is to certify that the City Council of the City of Manvel, Texas, has approved this plat of MERIDIANA DETENTION RESERVE M-2 in conformance with laws of the State of Texas and the ordinances of the City of Manvel as shown hereon and authorizes the recording of this plat this _____ day of _____, 2022.

City Council

JOB NO. 081-011-206

STATE OF TEXAS
COUNTY OF BRAZORIA

We, GR-M1, LTD., a Texas Limited Partnership, acting by and through Matt Lawson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR-M1, LTD., a Texas Limited Partnership, owner of the property subdivided in this plat, MERIDIANA DETENTION RESERVE M-2, a subdivision of 4.644 acres out of the H. T. & B. R.R. Co. Survey, Section 61, GR-M1, LTD., a Texas Limited Partnership, according to the lines, lots, building lines, streets, alleys, parks and easements as shown hereon and dedicate for public use, the streets, alleys, parks and easements shown hereon, and for the same all claims for damages occasioned by the establishment of grades as approved for the streets and drainage easements dedicated, or occasioned by the maintenance or use of the same, and do hereby bind ourselves, our heirs, successors and assigns to warrant and defend the title to the land so dedicated.

IN TESTIMONY WHEREOF, GR-M1, LTD., a Texas limited partnership, has caused these presents to be signed by Matt Lawson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR-M1, LTD., a Texas Limited Partnership, thereunto authorized by this the 7th day of December, 2021.

OWNER
GR-M1, LTD., A Texas Limited Partnership
By: Rise Communities, LLC,
A Nevada Limited Liability Company,
Authorized Agent

BY: _____
Print Name: Matt Lawson
Title: President

STATE OF TEXAS §
COUNTY OF HARRIS §

BEFORE ME, the undersigned authority, on this day personally appeared Matt Lawson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR-M1, LTD., a Texas Limited Partnership, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed, and as the act and deed of said limited liability company.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 9th day of December, 2021.

Notary Public in and for the
State of Texas
My Notary Commission Expires April 11, 2023

I, Robert Boetsche, a Registered Professional Land Surveyor of the State of Texas, hereby certify that this subdivision is true and correct, was prepared from an actual boundary survey of the property made under my supervision on the ground during the month of October, 2021, that the boundary corners, angle points, points of curvature/tangency and intersection, and the boundary corners, angle points, points of curvature/tangency and interior corners of this subdivision were not set at the time this plat was signed by me and that all corners, angle points, points of curvature/tangency and intersection, and interior corners within the subdivision and that all previously existing property markers are sufficiently described on this document as found and all set markers are a minimum of 5/8" inch diameter iron rod with surveyor's cap.

Robert C. Boetsche
Robert Boetsche, Registered Professional Land Surveyor
Texas Registration No. 6448

APPROVED BY BRAZORIA COUNTY DRAINAGE DISTRICT NO. 5

Lee Walden, P.E., President — Date 12/6/21
Kerry L. Gilpin, Vice President — Date 12/6/21
Brandon Middleton, Secretary/Treasurer — Date 12/6/21
Jarrod D. Aden, P.E., C.F.M., District Engineer — Date 12/6/21

Note: Project field startup will start within 365 calendar days from date here shown. Continuous and reasonable field site work is expected.

BCDD REF ID # B210031

BENCHMARK(S):

NGS MONUMENT # J 108 DISK SET IN TOP OF CONCRETE MONUMENT LOCATED 0.1 MILE WEST OF A RAILROAD CROSSING, 5+1/2 FEET NORTHWEST OF WEST POLE 38, 0.4 MILE SOUTH OF THE INTERSECTION OF FM 1128 AND SAN FELIPE ROAD, 6.7 FEET NORTH OF THE RIGHT-OF-WAY FENCE, 3 FEET WEST OF A WHITE WOODEN WITNESS POST AND SET IN THE TOP OF A CONCRETE POST ELEV.=52.00 (NAVD '88) 1991 ADJUSTMENT

FINAL PLAT
MERIDIANA
DETENTION RESERVE M-2

BEING A SUBDIVISION OF 4.644 ACRES OUT OF THE H. T. & B. R.R. CO. SURVEY, SECTION 61, ABSTRACT 282, AND THE OLIVER HALL SURVEY, ABSTRACT 203 CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

1 BLOCK 4 RESERVES (4.644 ACRES)

OWNER
GR-M1, LTD.
A TEXAS LIMITED PARTNERSHIP
1602 AVENUE D, SUITE 100
KATY, TEXAS 77492
PH (832) 437-7863

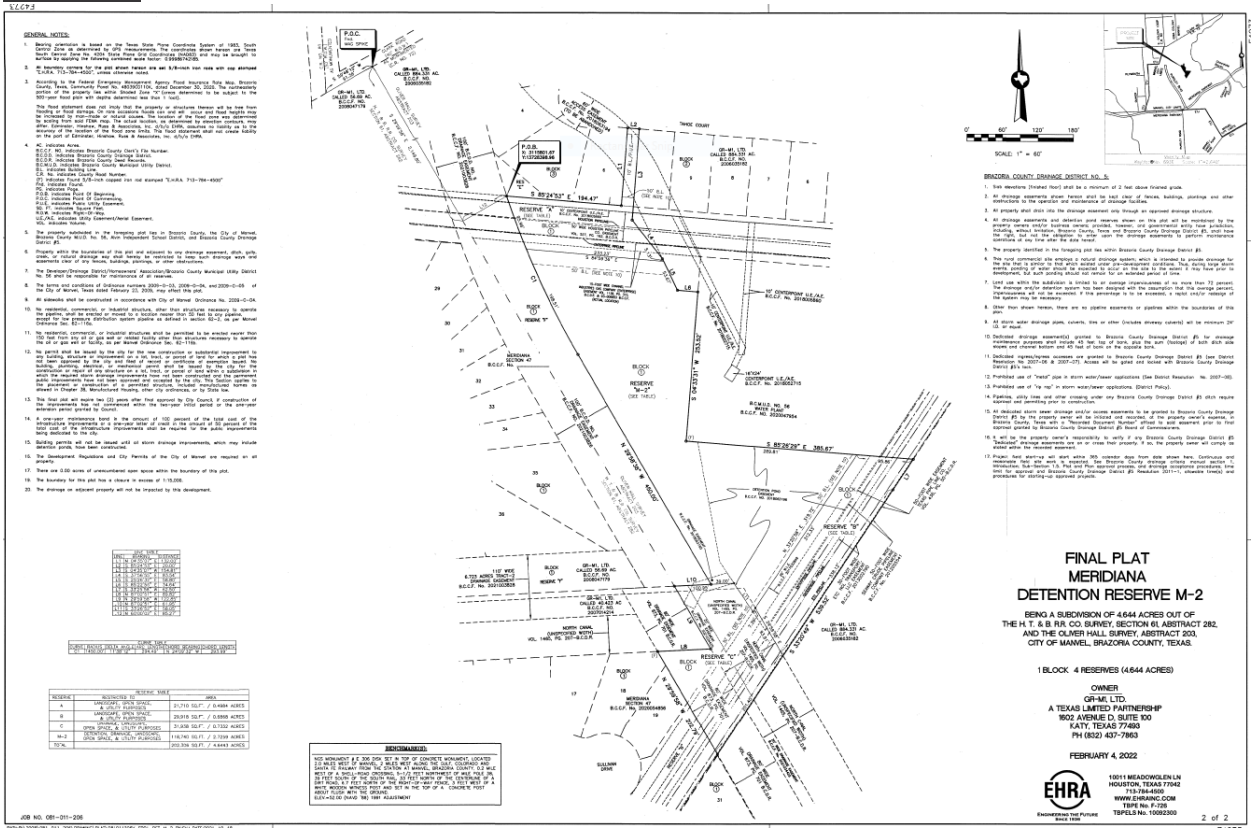
FEBRUARY 4, 2022

EHRA
ENGINEERING THE FUTURE Since 1956
10011 MEADOWGLEN LN
HOUSTON, TEXAS 77042
713-784-4500
WWW.EHRAINC.COM
TBPE No. F-726
TBPELS No. 10092300

1 of 2

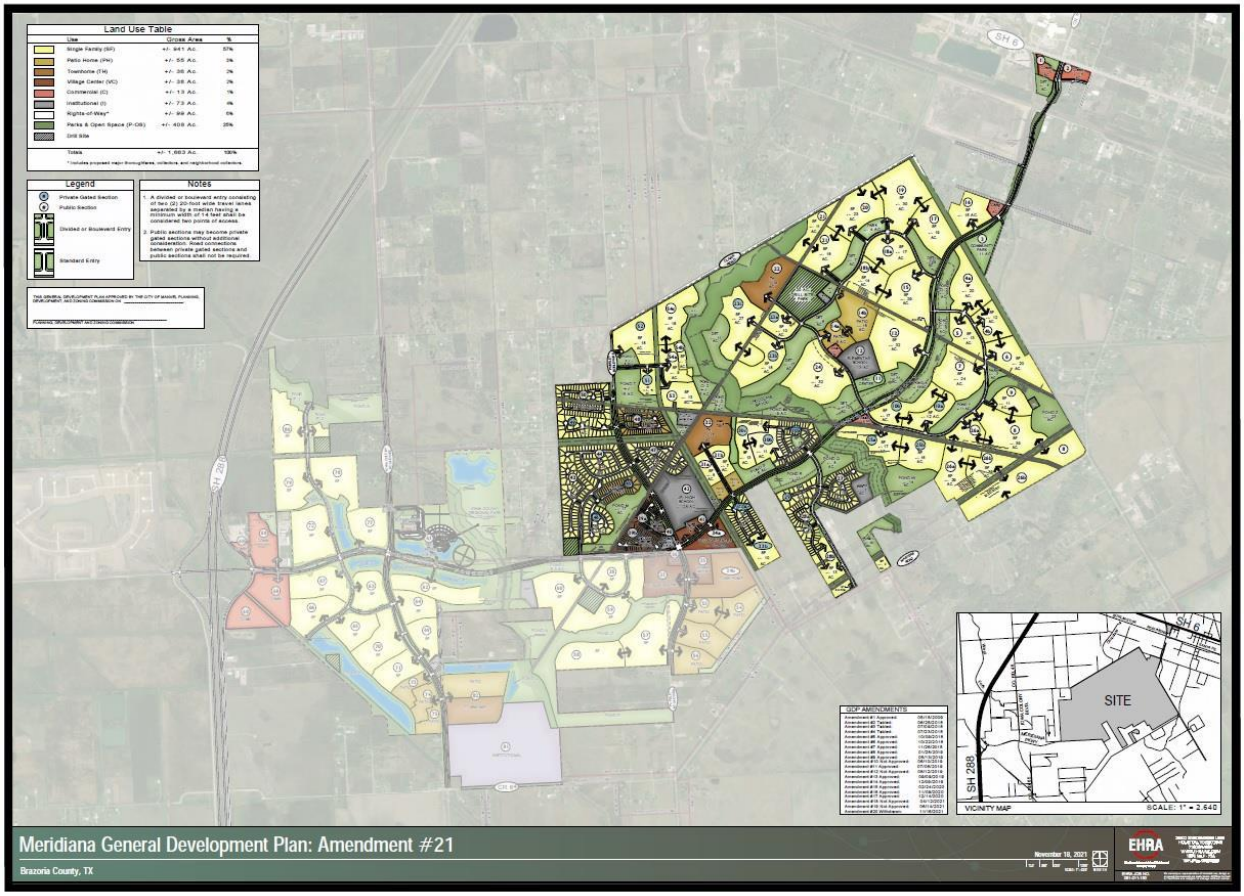
Development Services Department
20025 Highway 6
Manvel, TX 77578
281-489-0630

Plat Exhibit



DEVELOPMENT SERVICES DEPARTMENT
20025 HIGHWAY 6
MANVEL, TX 77578
281-489-0630

Meridiana General Development Plan Amendment No. 21 (dated November 19, 2021)



METES AND BOUNDS DESCRIPTION
MERIDIANA
DETENTION RESERVE M-2
BEING A 4.644 ACRE TRACT OF LAND SITUATED IN
THE H. T. & B. R.R. COMPANY SURVEY, SECTION 61, ABSTRACT 282
AND THE OLIVER HALL SURVEY, ABSTRACT 203
BRAZORIA COUNTY, TEXAS

A DESCRIPTION OF A 4.644 ACRE TRACT OF LAND IN THE H. T. & B. R.R. COMPANY SURVEY, SECTION 61, ABSTRACT 282 AND THE OLIVER HALL SURVEY, ABSTRACT 203, BRAZORIA COUNTY, TEXAS, BEING OUT OF THOSE CERTAIN TRACTS CALLED 884.331 ACRES DESCRIBED IN DEED TO GR-M1, LTD. RECORDED UNDER BRAZORIA COUNTY CLERK'S FILE NUMBER (B.C.C.F. NO.) 2006035182, AND A CALLED 40.423 ACRES RECORDED UNDER B.C.C.F. NO. 2007014214; THE SAID 4.644 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS (BEARINGS BASED ON TEXAS STATE PLANE COORDINATE SYSTEM OF 1983 SOUTH CENTRAL ZONE AS DETERMINED BY GPS MEASUREMENTS):

COMMENCING at a magnetized spike stamped "MAG SPIKE SURVEY MARK" found at the northerly common corner of said Oliver Hall Survey and the H. T. & B. R.R. Co. Survey, same being the northwest corner of the said 884.331 acre tract and the northeast corner of that certain tract called 56.69 acres described in deed to GR-M1, LTD. recorded under B.C.C.F. NO. 2008047179;

THENCE, South 29°59'58" East, along the common line of said 884.331 and said 56.69 acre tract, same being the common line of the Oliver Hall Survey and the H.T. & B. R.R. Co. Survey, for a distance of 2,149.80 feet to a point for corner;

THENCE, North 60°00'02" East, a distance of 85.27 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set marking the northwesterly corner and the POINT OF BEGINNING of the herein described tract of land;

1) THENCE, South 85°24'53" East, for a distance of 194.47 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

2) THENCE, North 04°35'07" East, for a distance of 132.00 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

3) THENCE, South 85°24'53" East, for a distance of 20.00 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

4) THENCE, North 04°35'07" West, for a distance of 154.81 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

5) THENCE, South 37°56'55" East, for a distance of 83.54 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

6) THENCE, South 25°26'32" East, for a distance of 58.80 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

7) THENCE, South 85°22'56" East, for a distance of 34.64 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner being in the westerly line of the Brazoria County Municipal Utility District No. 56 Water Plant recorded under B.C.C.F. NO. 2020047954;

8) THENCE, South 04°33'31" West, along the westerly line of said Water Plant for a distance of 253.52 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" found marking the southwesterly corner of said Water Plant;

9) THENCE, South 85°26'29" East, along the southerly line of said Water Plant for a distance of 385.67 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set marking the most easterly northeast corner of the herein described tract of land;

10) THENCE, South 33°25'58" West, for a distance of 62.50 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for an angle point;

11) THENCE, South 33°20'49" West, for a distance of 539.52 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner being in the easterly line of Reserve "B" Block 1 of Meridiana Section 47 as per plat recorded under B.C.C.F. NO. 2020054856;

12) THENCE, North 29°59'58" West, continuing along the easterly line of said Meridiana Section 47 for a distance of 202.79 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" found marking the northeastery corner of said Meridiana Section 47;

13) THENCE, North 87°02'51" East, for a distance of 89.82 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner being in the common line of aforementioned 40.423 acre tract and said 884.331 acre tract;

14) THENCE, North 29°59'58" West, along the common line between said 40.423 acre tract and said 884.331 acre tract for a distance of 122.85 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

15) THENCE, North 87°02'51" East, for a distance of 61.95 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

16) THENCE, North 29°58'38" West, for a distance of 450.00 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for curvature;

17) THENCE, in a northwesterly direction along the arc of said curve to the right having a radius of 1,450.00 feet, a central angle of 11°38'12", an arc length of 294.49 feet, and a chord bearing of North 24°09'32" West, for a distance of 293.99 feet to the POINT OF BEGINNING and containing 4.644 acres of land.

This is to certify that the Planning, Development and Zoning Commission of the City of Manvel, Texas, has recommended approval of this plat of MERIDIANA DETENTION RESERVE M-2 in conformance with laws of the State of Texas and the ordinances of the City of Manvel as shown hereon and authorizes the recording of this plat this _____ day of _____, 2022.

_____
Planning, Development and Zoning Commission

This is to certify that the City Council of the City of Manvel, Texas, has approved this plat of MERIDIANA DETENTION RESERVE M-2 in conformance with laws of the State of Texas and the ordinances of the City of Manvel as shown hereon and authorizes the recording of this plat this _____ day of _____, 2022.

_____
City Council

STATE OF TEXAS:

COUNTY OF BRAZORIA:

We, GR-M1, LTD., a Texas Limited Partnership, acting by and through Matt Lawson, President of Rise Communities, LLC, A Nevada Limited Liability Company, Authorized Agent for GR-M1, LTD., a Texas Limited Partnership, owner of the property subdivided in this plat, MERIDIANA DETENTION RESERVE M-2, do hereby make subdivision of said property for and on behalf of said GR-M1, LTD., a Texas Limited Partnership, according to the lines, lots, building lines, streets, alleys, parks and easements as shown hereon and dedicate for public use, the streets, alleys, parks and easements shown hereon forever, and do hereby waive all claims for damages occasioned by the establishment of grades as approved for the streets and drainage easements dedicated, or occasioned by the alteration of the surface, or any portion of the streets or drainage easements to conform to such grades, and do hereby bind ourselves, our heirs, successors and assigns to warrant and defend the title to the land so dedicated.

IN TESTIMONY WHEREOF, GR-M1, LTD., a Texas limited partnership, has caused these presents to be signed by Matt Lawson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR-M1, LTD., a Texas Limited Partnership, thereunto authorized by this 9th day of December, 2021.

OWNER

GR-M1, LTD., A Texas Limited Partnership
By: Rise Communities, LLC,
A Nevada Limited Liability Company,
Authorized Agent

BY: _____

Print Name: Matt Lawson

Title: President

STATE OF TEXAS §
COUNTY OF HARRIS §

BEFORE ME, the undersigned authority, on this day personally appeared Matt Lawson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR-M1, LTD., a Texas Limited Partnership, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and considerations therein expressed, and as the act and deed of said limited liability company.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 9th day of December, 2021.

_____
Notary Public in and for the
State of Texas
My Notary Commission Expires April 11, 2022

JACQUELYN D. OVERTON
Notary ID #126077204-8
My Commission Expires
April 11, 2022

I, Robert Boelsche, a Registered Professional Land Surveyor of the State of Texas, hereby certify that this subdivision is true and correct; was prepared from an actual boundary survey of the property made on the ground under my supervision according to the standards of practice of the Texas Board of Professional Land Surveyors; that the plat boundary corners have been tied to the nearest street intersection; that the boundary corners, angle points, points of curvature/tangency and interior corners of this subdivision were not set at the time this plat was signed by me and that these corners are to be set after construction of the public infrastructure and final lot grading within the subdivision; and that all previously existing property markers are sufficiently described on this document as found and all set markers are a minimum of 5/8- inch diameter iron rod with surveyor's cap.

STATE OF TEXAS
ROBERT L. BOELSCHE
4446
PROFESSIONAL LAND SURVEYOR

Robert L Boelsche

Robert Boelsche, Registered Professional Land Surveyor
Texas Registration No. 4446

APPROVED BY BRAZORIA COUNTY DRAINAGE DISTRICT NO. 5

Lee Walden, P.E., President — Date 12/6/21

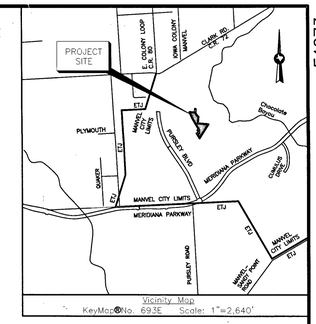
Kerry L. Osburn, Vice President — Date 12/6/21

Brandon Middleton, Secretary/Treasurer — Date 12/6/21

Jarrod D. Aden, P.E., C.F.M., District Engineer — Date 12/6/21

Note: Project field startup will start within 365 calendar days from date here shown. Continuous and reasonable field site work is expected.

BCDD5 REF ID # B210051



BENCHMARK(S):

NGS MONUMENT # E 306 DISK SET IN TOP OF CONCRETE MONUMENT, LOCATED 2.0 MILES WEST OF MANVEL, 2 MILES WEST ALONG THE GULF, COLORADO AND SANTA FE RAILWAY FROM THE STATION AT MANVEL, BRAZORIA COUNTY, 0.2 MILE WEST OF A SHELL-ROAD CROSSING, 5-1/2 FEET NORTHWEST OF MILE POLE 38, 39 FEET SOUTH OF THE SOUTH RAIL, 33 FEET NORTH OF THE CENTERLINE OF A DIRT ROAD, 6.7 FEET NORTH OF THE RIGHT-OF-WAY FENCE, 3 FEET WEST OF A WHITE WOODEN WITNESS POST AND SET IN THE TOP OF A CONCRETE POST ABOUT FLUSH WITH THE GROUND.
ELEV.=52.00 (NAVD '88) 1991 ADJUSTMENT

FINAL PLAT
MERIDIANA
DETENTION RESERVE M-2

BEING A SUBDIVISION OF 4.644 ACRES OUT OF
THE H. T. & B. R.R. CO. SURVEY, SECTION 61, ABSTRACT 282,
AND THE OLIVER HALL SURVEY, ABSTRACT 203;
CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

1 BLOCK 4 RESERVES (4.644 ACRES)

OWNER
GR-M1, LTD.
A TEXAS LIMITED PARTNERSHIP
1602 AVENUE D, SUITE 100
KATY, TEXAS 77493
PH (832) 437-7863

FEBRUARY 4, 2022

EHRA
ENGINEERING THE FUTURE SINCE 1936
10011 MEADOWGLEN LN
HOUSTON, TEXAS 77042
713-784-4500
WWW.EHRAINC.COM
TBPE No. F-726
TBPELS No. 10092300

E4273

GENERAL NOTES:

1. Bearing orientation is based on the Texas State Plane Coordinate System of 1983, South Central Zone as determined by GPS measurements. The coordinates shown hereon are Texas South Central Zone No. 4204 State Plane Grid Coordinates (NAD83) and may be brought to surface by applying the following combined scale factor: 0.99986742185.

2. **All boundary corners for the plat shown hereon are set 5/8-inch iron rods with cap stamped "E.H.R.A. 713-784-4500", unless otherwise noted.**

3. According to the Federal Emergency Management Agency Flood Insurance Rate Map, Brazoria County, Texas, Community Panel No. 48039C0110K, dated December 30, 2020. The northeasterly portion of the property lies within Shaded Zone "X" (areas determined to be subject to the 500-year flood plain with depths determined less than 1 foot).

   This flood statement does not imply that the property or structures thereon will be free from flooding or flood damage. On rare occasions floods can and will occur and flood heights may be increased by man-made or natural causes. The location of the flood zone was determined by scaling from said FEMA map. The actual location, as determined by elevation contours, may differ. Edminster, Hinshaw, Russ & Associates, Inc. d/b/a EHRA, assumes no liability as to the accuracy of the location of the flood zone limits. This flood statement shall not create liability on the part of Edminster, Hinshaw, Russ & Associates, Inc. d/b/a EHRA.

4. AC. indicates Acres.
   B.C.C.F. NO. indicates Brazoria County Clerk's File Number.
   B.C.D.D. indicates Brazoria County Drainage District.
   B.C.D.R. indicates Brazoria County Deed Records.
   B.C.M.U.D. indicates Brazoria County Municipal Utility District.
   B.L. indicates Building Line.
   C.R. No. indicates County Road Number.
   (F) indicates Found 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500"
   Fnd. indicates Found.
   PG. indicates Page.
   P.O.B. indicates Point Of Beginning.
   P.O.C. indicates Point Of Commencing.
   P.U.E. indicates Public Utility Easement.
   SQ. FT. indicates Square Feet.
   R.O.W. indicates Right-Of-Way.
   U.E./A.E. indicates Utility Easement/Aerial Easement.
   VOL. indicates Volume.

5. The property subdivided in the foregoing plat lies in Brazoria County, the City of Manvel, Brazoria County M.U.D. No. 56, Alvin Independent School District, and Brazoria County Drainage District #5.

6. Property within the boundaries of this plat and adjacent to any drainage easement, ditch, gully, creek, or natural drainage way shall hereby be restricted to keep such drainage ways and easements clear of any fences, buildings, plantings, or other obstructions.

7. The Developer/Drainage District/Homeowners' Association/Brazoria County Municipal Utility District No. 56 shall be responsible for maintenance of all reserves.

8. The terms and conditions of Ordinance numbers 2009-0-03, 2009-0-04, and 2009-0-05 of the City of Manvel, Texas dated February 23, 2009, may affect this plat.

9. All sidewalks shall be constructed in accordance with City of Manvel Ordinance No. 2009-0-04.

10. No residential, commercial, or industrial structure, other than structures necessary to operate the pipeline, shall be erected or moved to a location nearer than 50 feet to any pipeline, except for low pressure distribution system pipeline as defined in section 62-2, as per Manvel Ordinance Sec. 62-116a.

11. No residential, commercial, or industrial structures shall be permitted to be erected nearer than 150 feet from any oil or gas well or related facility other than structures necessary to operate the oil or gas well or facility, as per Manvel Ordinance Sec. 62-116b.

12. No permit shall be issued by the city for the new construction or substantial improvement to any building, structure or improvement on a lot, tract, or parcel of land for which a plat has not been approved by the city and filed of record or certificate of exemption issued. No building, plumbing, electrical, or mechanical permit shall be issued by the city for the construction or repair of any structure on a lot, tract, or parcel of land within a subdivision in which the required storm drainage improvements have not been constructed and the permanent public improvements have not been approved and accepted by the city. This Section applies to the placement or construction of a permitted structure, included manufactured homes as allowed in Chapter 38, Manufactured Housing, other city ordinances, or by State law.

13. This final plat will expire two (2) years after final approval by City Council, if construction of the improvements has not commenced within the two-year initial period or the one-year extension period granted by Council.

14. A one-year maintenance bond in the amount of 100 percent of the total cost of the infrastructure improvements or a one-year letter of credit in the amount of 50 percent of the total cost of the infrastructure improvements shall be required for the public improvements being dedicated to the city.

15. Building permits will not be issued until all storm drainage improvements, which may include detention ponds, have been constructed.

16. The Development Regulations and City Permits of the City of Manvel are required on all property.

17. There are 0.00 acres of unencumbered open space within the boundary of this plat.

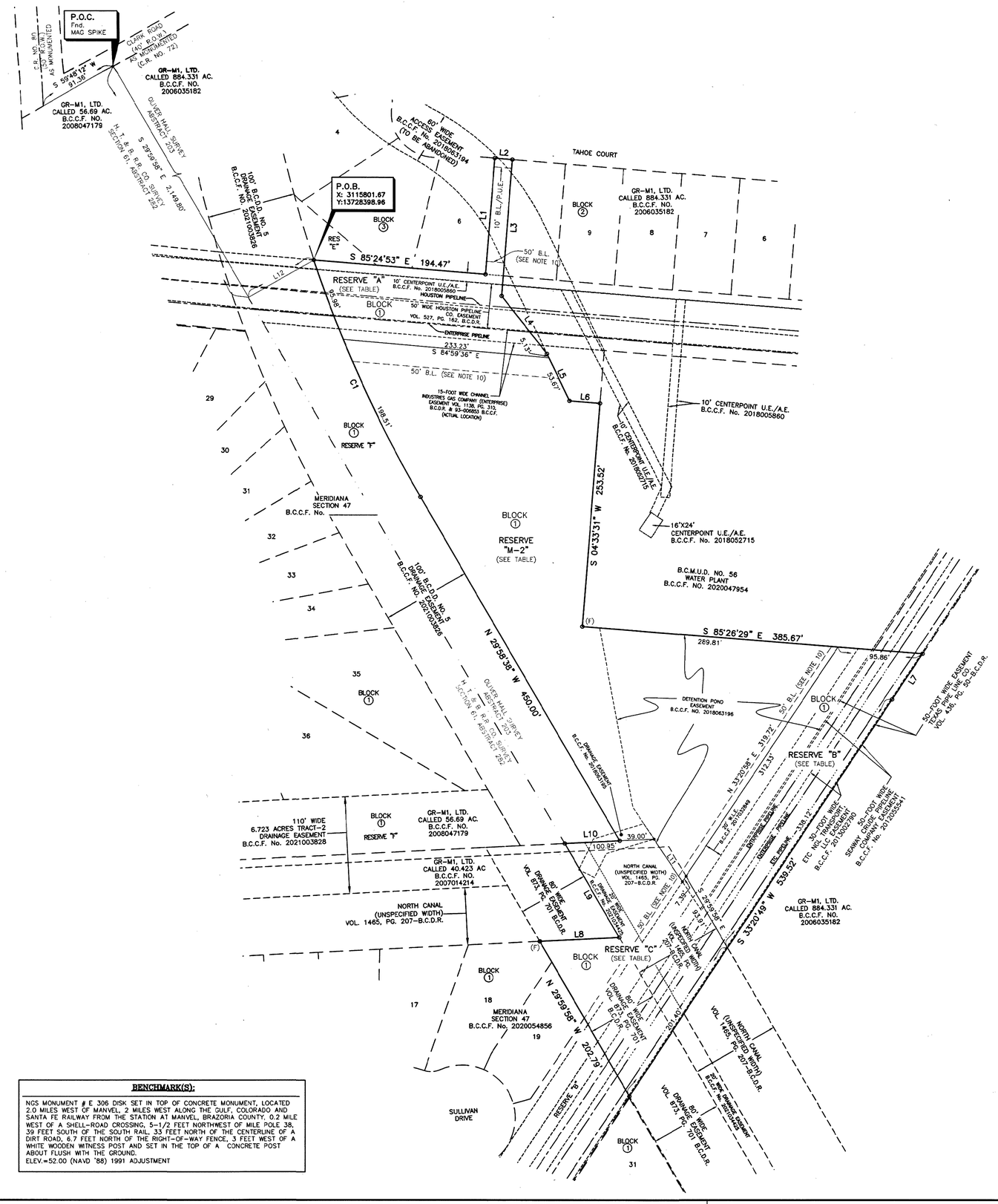
19. The boundary for this plat has a closure in excess of 1:15,000.

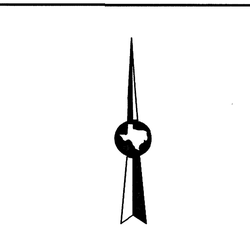
20. The drainage on adjacent property will not be impacted by this development.

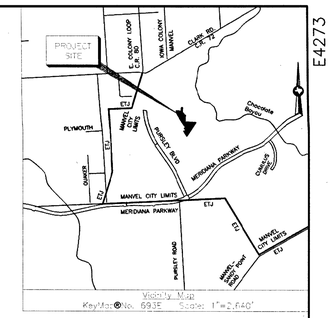
LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 04°35'07" E	132.00'
L2	S 85°24'53" E	20.00'
L3	S 04°35'07" W	154.81'
L4	S 37°56'55" E	83.54'
L5	S 25°26'32" E	58.80'
L6	S 85°22'58" E	34.64'
L7	S 33°25'58" W	62.50'
L8	N 87°02'51" E	89.82'
L9	N 29°59'08" W	122.85'
L10	N 87°02'51" E	61.95'
L11	S 33°26'52" E	58.05'
L12	N 60°00'02" E	85.27'

CURVE TABLE					
CURVE	RADIUS	DELTA ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	1450.00'	11°38'12"	294.49'	N 24°09'32" W	293.99'

RESERVE TABLE		
RESERVE	RESTRICTED TO	AREA
A	LANDSCAPE, OPEN SPACE, & UTILITY PURPOSES	21,710 SQ.FT. / 0.4984 ACRES
B	LANDSCAPE, OPEN SPACE, & UTILITY PURPOSES	29,918 SQ.FT. / 0.6868 ACRES
C	DRAINAGE, LANDSCAPE, OPEN SPACE, & UTILITY PURPOSES	31,938 SQ.FT. / 0.7332 ACRES
M-2	DETENTION, DRAINAGE, LANDSCAPE, OPEN SPACE, & UTILITY PURPOSES	118,740 SQ.FT. / 2.7259 ACRES
TOTAL		202,306 SQ.FT. / 4.6443 ACRES







BRAZORIA COUNTY DRAINAGE DISTRICT NO. 5:

1. Slab elevations (finished floor) shall be a minimum of 2 feet above finished grade.
2. All drainage easements shown hereon shall be kept clear of fences, buildings, plantings and other obstructions to the operation and maintenance of drainage facilities.
3. All property shall drain into the drainage easement only through an approved drainage structure.
4. All drainage easements and detention pond reserves shown on this plat will be maintained by the property owners and/or business owners; provided, however, and governmental entity have jurisdiction, including, without limitation, Brazoria County, Texas and Brazoria County Drainage District #5, shall have the right, but not the obligation to enter upon the drainage easements to perform maintenance operations at any time after the date hereof.
5. The property identified in the foregoing plat lies within Brazoria County Drainage District #5.
6. This rural commercial site employs a natural drainage system; which is intended to provide drainage for the site that is similar to that which existed under pre-development conditions. Thus, during large storm events, ponding of water should be expected to occur on the site to the extent it may have prior to development, but such ponding should not remain for an extended period of time.
7. Land use within the subdivision is limited to an average imperviousness of no more than 72 percent. The drainage and/or detention system has been designed with the assumption that this average percent, imperviousness will not be exceeded. If this percentage is to be exceeded, a replat and/or redesign of the system may be necessary.
8. Other than shown hereon, there are no pipeline easements or pipelines within the boundaries of this plan.
9. All storm water drainage pipes, culverts, tiles or other (includes driveway culverts) will be minimum 24" I.D. or equal.
10. Dedicated drainage easement(s) granted to Brazoria County Drainage District #5 for drainage maintenance purposes shall include 45 feet top of bank, plus the sum (footage) of both ditch side slopes and channel bottom and 45 feet of bank on the opposite bank.
11. Dedicated ingress/egress accesses are granted to Brazoria County Drainage District #5 (see District Resolution No. 2007-06 & 2007-07). Access will be gated and locked with Brazoria County Drainage District #5's lock.
12. Prohibited use of "metal" pipe in storm water/sewer applications (See District Resolution No. 2007-08).
13. Prohibited use of "rip rap" in storm water/sewer applications. (District Policy).
14. Pipelines, utility lines and other crossing under any Brazoria County Drainage District #5 ditch require approval and permitting prior to construction.
15. All dedicated storm sewer drainage and/or access easements to be granted to Brazoria County Drainage District #5 by the property owner will be initiated and recorded, at the property owner's expense, in Brazoria County, Texas with a "Recorded Document Number" affixed to said easement prior to final approval granted by Brazoria County Drainage District #5 Board of Commissioners.
16. It will be the property owner's responsibility to verify if any Brazoria County Drainage District #5 "Dedicated" drainage easements are on or cross their property. If so, the property owner will comply as stated within the recorded easement.
17. Project field start-up will start within 365 calendar days from date shown here. Continuous and reasonable field site work is expected. See Brazoria County drainage criteria manual section 1, Introduction; Sub-Section 1.5, Plat and Plan approval process, and drainage acceptance procedures; time limit for approval and Brazoria County Drainage District #5 Resolution 2011-1, allowable time(s) and procedures for starting-up approved projects.

BENCHMARK(S):

NGS MONUMENT # E 306 DISK SET IN TOP OF CONCRETE MONUMENT, LOCATED 2.0 MILES WEST OF MANVEL, 2 MILES WEST ALONG THE GULF, COLORADO AND SANTA FE RAILWAY FROM THE STATION AT MANVEL, BRAZORIA COUNTY, 0.2 MILE WEST OF A SHELL-ROAD CROSSING, 5-1/2 FEET NORTHWEST OF MILE POLE 38, 39 FEET SOUTH OF THE SOUTH RAIL, 33 FEET NORTH OF THE CENTERLINE OF A DIRT ROAD, 6.7 FEET NORTH OF THE RIGHT-OF-WAY FENCE, 3 FEET WEST OF A WHITE WOODEN WITNESS POST AND SET IN THE TOP OF A CONCRETE POST ABOUT FLUSH WITH THE GROUND.
ELEV.=52.00 (NAVD '88) 1991 ADJUSTMENT

FINAL PLAT
MERIDIANA
DETENTION RESERVE M-2

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TBPE No. F-726
TBPELS No. 10092300

Land Use Table

Use	Gross Area	%
Single Family (SF)	+/- 941 Ac.	57%
Patio Home (PH)	+/- 55 Ac.	3%
Townhome (TH)	+/- 36 Ac.	2%
Village Center (VC)	+/- 38 Ac.	2%
Commercial (C)	+/- 13 Ac.	1%
Institutional (I)	+/- 73 Ac.	4%
Rights-of-Way*	+/- 99 Ac.	6%
Parks & Open Space (P-OS)	+/- 408 Ac.	25%
Drill Site		
Totals	+/- 1,663 Ac.	100%

* Includes proposed major thoroughfares, collectors, and neighborhood collectors.

Legend

- (#) Private Gated Section
- (#) Public Section
- Divided or Boulevard Entry (See Note 1)
- Standard Entry (See Note 2)

Notes

1. A divided or boulevard entry consisting of two (2) 20-foot wide travel lanes separated by a median having a minimum width of 14 feet shall be considered two points of access.
2. A standard entry is the right-of-way width determined by Table 2 (Page 17) or as otherwise stated in the adopted O-PUD document.
3. Public sections may become private gated sections without additional consideration. Road connections between private gated sections and public sections shall not be required. This note shall not apply to Section 20 and Section 26 as identified on this document.
4. The Clark Road ingress/egress from Section 20 and S Masters Road ingress/egress from Section 26B shall maintain a minimum public right-of-way width of 60-feet with no parking.

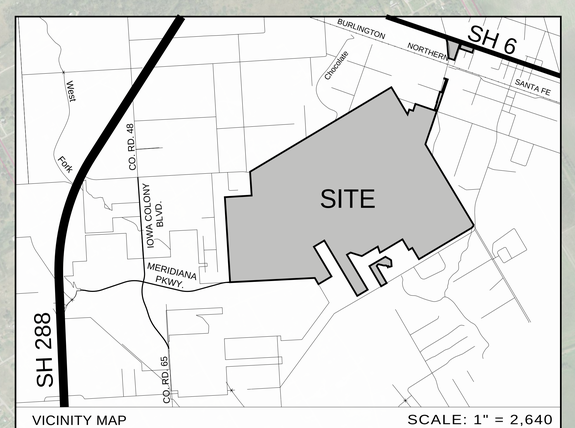
THIS GENERAL DEVELOPMENT PLAN APPROVED BY THE CITY OF MANVEL PLANNING, DEVELOPMENT, AND ZONING COMMISSION ON _____.

_____
PLANNING, DEVELOPMENT AND ZONING COMMISSION

SH 6
SH 288
CR 64
Kruger Road
Jordan Road
CLARK ROAD
MASTERS ROAD
MERIDIANA PARKWAY
CHOCOLATE BAYOU
IOWA COLONY CITY LIMIT
IOWA COLONY REGIONAL PARK 102.1 AC.
ELEMENTARY SCHOOL 15 AC.
REC. CENTER 4.6 AC.
JR. HIGH SCHOOL 28 AC.
ELEMENTARY SCHOOL 13 AC.
20 AC. DRILL SITE/ PARK
VILLAGE CENTER 10 AC.
INSTITUTIONAL
TOWNHOME
TH
PATIO
COMM.
PARK
DET.
LIFT STATION
WWTP
POND A
POND B
POND C
POND D
POND E
POND F-1
POND F-2
POND G
POND H
POND I
POND J
POND K
POND L 8.0 AC.
POND M 17 AC.
POND N
POND O
POND P
POND Q 8 AC.
POND R 11 AC.
POND T +/- 15 AC.
POND V +/- 4 AC.
POND W 14 AC.
POND X 13 AC.
POND Y 11 AC.
POND Z 23 AC.
POND N-2 +/- 4 AC.
POND O-2 +/- 5 AC.
POND C-2 5 AC.
POND D-2 8 AC.
POND #9 9 AC.
POND S 6 AC.
MUD NO. 54 WATER PLANT +/- 2 AC.
MUD NO. 54 WATER PLANT +/- 1 AC.
SF
COMM
PATIO
TOWNHOME
INSTITUTIONAL

GDP AMENDMENTS

Amendment #1 Approved:	05/18/2009
Amendment #2 Tabled:	06/25/2018
Amendment #3 Tabled:	07/09/2018
Amendment #4 Tabled:	07/23/2018
Amendment #5 Approved:	10/09/2018
Amendment #6 Approved:	10/22/2018
Amendment #7 Approved:	11/26/2018
Amendment #8 Approved:	01/28/2019
Amendment #9 Approved:	05/13/2019
Amendment #10 Not Approved:	06/10/2019
Amendment #11 Approved:	07/08/2019
Amendment #12 Not Approved:	08/12/2019
Amendment #13 Approved:	09/09/2019
Amendment #14 Approved:	12/09/2019
Amendment #15 Approved:	02/24/2020
Amendment #16 Approved:	11/09/2020
Amendment #17 Approved:	12/14/2020
Amendment #18 Not Approved:	04/12/2021
Amendment #19 Not Approved:	06/14/2021
Amendment #20 Withdrawn:	11/16/2021



VICINITY MAP SCALE: 1" = 2,640

Meridiana General Development Plan: Amendment #21

Brazoria County, TX

November 19, 2021

150' 300' 600' 1200'
SCALE: 1"=600' NORTH

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TBPE No. F- 726
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EHRA JOB NO. 081-011-150

No warranty or representation of intended use, design or proposed improvements are made herein. All Plans for land or facilities are subject to change without notice.

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SH 288
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MASTERS ROAD
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POND F-1
POND F-2
POND G
POND H
POND I
POND J
POND K
POND L 8.0 AC.
POND M 17 AC.
POND N
POND O
POND P
POND Q 8 AC.
POND R 11 AC.
POND T +/- 15 AC.
POND V +/- 4 AC.
POND W 14 AC.
POND X 13 AC.
POND Y 11 AC.
POND Z 23 AC.
POND N-2 +/- 4 AC.
POND O-2 +/- 5 AC.
POND C-2 5 AC.
POND D-2 8 AC.
POND #9 9 AC.
POND S 6 AC.
MUD NO. 54 WATER PLANT +/- 2 AC.
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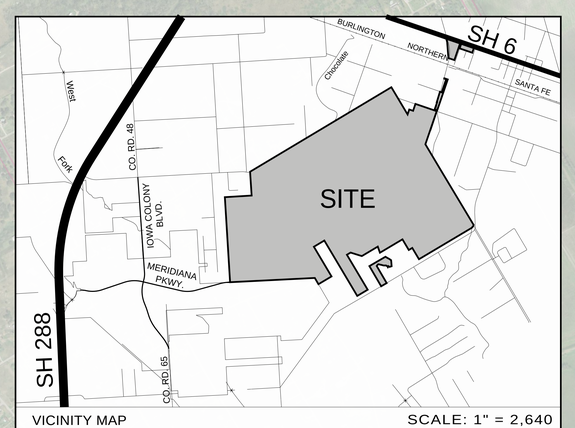

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Meridiana General Development Plan: Amendment #21

Brazoria County, TX

November 19, 2021

150' 300' 600' 1200'
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EHRA JOB NO. 081-011-150

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E4263

METES AND BOUNDS DESCRIPTION
MERIDIANA
DETENTION RESERVE N-2
BEING A 7.081 ACRE TRACT OF LAND SITUATED IN
THE OLIVER HALL SURVEY, ABSTRACT 203
BRAZORIA COUNTY, TEXAS

A DESCRIPTION OF A 7.081 ACRE TRACT OF LAND IN THE OLIVER HALL SURVEY, ABSTRACT 203, BRAZORIA COUNTY, TEXAS, BEING OUT OF THAT CERTAIN TRACT CALLED 884.331 ACRES DESCRIBED IN DEED TO GR-M1, LTD. RECORDED UNDER BRAZORIA COUNTY CLERK'S FILE NUMBER (B.C.C.F. NO.) 2006035182; THE SAID 7.081 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS (BEARINGS BASED ON TEXAS STATE PLANE COORDINATE SYSTEM OF 1983 SOUTH CENTRAL ZONE AS DETERMINED BY GPS MEASUREMENTS):

COMMENCING at a magnetized spike stamped "MAG SPIKE SURVEY MARK" found at the northerly common corner of said Oliver Hall Survey and the H. T. & B. R.R. Co. Survey, Section 61, Abstract 282, same being the northwest corner of the said 884.331 acre tract and the northeast corner of that certain tract called 56.69 acres described in deed to GR-M1, LTD. recorded under B.C.C.F. NO. 2008047179;

THENCE, South 29°59'58" East, along the common line of said 884.331 and said 56.69 acre tract, same being the common line of the Oliver Hall Survey and the H.T. & B. R.R. Co. Survey, for a distance of 2,421.66 feet to a point for corner;

THENCE, North 60°00'02" East, a distance of 899.35 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set marking the most westerly northwest corner and the POINT OF BEGINNING of the herein described tract of land;

1) THENCE, South 71°26'51" East, for a distance of 63.48 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

2) THENCE, South 21°50'54" East, for a distance of 97.32 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

3) THENCE, North 33°24'32" East, for a distance of 568.40 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set marking the most northerly corner of the herein described tract of land;

4) THENCE, South 79°01'02" East, for a distance of 51.34 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

5) THENCE, South 45°22'14" East, for a distance of 112.12 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

6) THENCE, South 19°47'56" East, for a distance of 163.34 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

7) THENCE, South 03°18'59" West, for a distance of 295.24 feet to 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

8) THENCE, South 56°46'50" East, for a distance of 313.46 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set marking the southwesterly corner of a 350 foot Drainage Easement recorded under B.C.C.F. NO. 2020011218;

9) THENCE, South 04°33'31" West, for a distance of 46.36 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner in the southeasterly corner of the herein described tract of land;

10) THENCE, North 85°26'29" West, for a distance of 801.41 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set marking the southwesterly corner of the herein described tract of land;

11) THENCE, North 33°25'58" East, for a distance of 85.55 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

12) THENCE, North 56°34'02" West, for a distance of 20.77 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

13) THENCE, North 85°24'53" West, for a distance of 56.41 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

14) THENCE, North 33°24'32" East, for a distance of 118.50 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

15) THENCE, North 21°50'54" West, for a distance of 104.27 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

16) THENCE, North 71°26'51" West, for a distance of 41.58 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner in the arc of a curve to the left;

17) THENCE, in a northerly direction along the arc of said curve to the left having a radius of 60.00 feet, a central angle of 30°00'00", an arc length of 31.42 feet, and a chord bearing of North 03°33'09" East, for a distance of 31.06 feet to the POINT OF BEGINNING and containing 7.081 acres of land.

This is to certify that the Planning, Development and Zoning Commission of the City of Manvel, Texas, has recommended approval of this plat of MERIDIANA DETENTION RESERVE N-2 in conformance with laws of the State of Texas and the ordinances of the City of Manvel as shown hereon and authorizes the recording of this plat this _____ day of _____, 2022.

_____
Planning, Development and Zoning Commission

This is to certify that the City Council of the City of Manvel, Texas, has approved this plat of MERIDIANA DETENTION RESERVE N-2 in conformance with laws of the State of Texas and the ordinances of the City of Manvel as shown hereon and authorizes the recording of this plat this _____ day of _____, 2022.

_____
City Council

STATE OF TEXAS:

COUNTY OF BRAZORIA:

We, GR-M1, LTD., a Texas Limited Partnership, acting by and through Matt Lawson, President of Rise Communities, LLC, A Nevada Limited Liability Company, Authorized Agent for GR-M1, LTD., a Texas Limited Partnership, owner of the property subdivided in this plat, MERIDIANA DETENTION RESERVE N-2, do hereby make subdivision of said property for and on behalf of said GR-M1, LTD., a Texas Limited Partnership, according to the lines, lots, building lines, streets, alleys, parks and easements as shown hereon and dedicate for public use, the streets, alleys, parks and easements shown hereon forever, and do hereby waive all claims for damages occasioned by the establishment of grades as approved for the streets and drainage easements dedicated, or occasioned by the alteration of the surface, or any portion of the streets or drainage easements to conform to such grades, and do hereby bind ourselves, our heirs, successors and assigns to warrant and defend the title to the land so dedicated.

IN TESTIMONY WHEREOF, GR-M1, LTD., a Texas limited partnership, has caused these presents to be signed by Matt Lawson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR-M1, LTD., a Texas Limited Partnership, thereunto authorized by this 6th day of December, 2021.

OWNER
GR-M1, LTD., A Texas Limited Partnership
By: Rise Communities, LLC,
A Nevada Limited Liability Company,
Authorized Agent

BY: _____
Print Name: Matt Lawson
Title: President

STATE OF TEXAS §
COUNTY OF HARRIS §

BEFORE ME, the undersigned authority, on this day personally appeared Matt Lawson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR-M1, LTD., a Texas Limited Partnership, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and considerations therein expressed, and as the act and deed of said limited liability company.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 9th day of December 2021.

JACQULYN D. OVERTON
Notary ID #12607204-8
My Commission Expires
April 11, 2022

_____
Notary Public in and for the
State of Texas
My Notary Commission Expires April 11, 2022

I, Robert Boelsche, a Registered Professional Land Surveyor of the State of Texas, hereby certify that this subdivision is true and correct; was prepared from an actual boundary survey of the property made on the ground under my supervision according to the standards of practice of the Texas Board of Professional Land Surveyors; that the plat boundary corners have been tied to the nearest street intersection; that the boundary corners, angle points, points of curvature/tangency and interior corners of this subdivision were not set at the time this plat was signed by me and that these corners are to be set after construction of the public infrastructure and final lot grading within the subdivision; and that all previously existing property markers are sufficiently described on this document as found and all set markers are a minimum of 5/8- inch diameter iron rod with surveyor's cap.

STATE OF TEXAS
REGISTERED
ROBERT L BOELSCHE
4446
PROFESSIONAL
LAND SURVEYOR

Robert L Boelsche

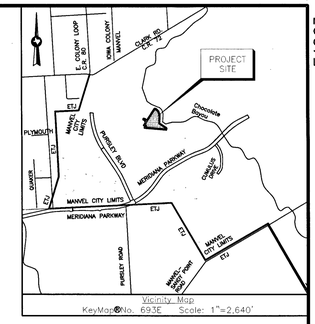
Robert Boelsche, Registered Professional Land Surveyor
Texas Registration No. 4446

APPROVED BY BRAZORIA COUNTY DRAINAGE DISTRICT NO. 5

Lee Walden, P.E., President — Date 12/6/21
Kerry L. Osburn, Vice President — Date 12/6/21
Brandon Middleton, Secretary/Treasurer — Date 12/6/21
Jarrod D. Aden, P.E., C.F.M., District Engineer — Date 12/6/21

Note: Project field startup will start within 365 calendar days from date here shown. Continuous and reasonable field site work is expected.

BCDD5 REF ID# B210058



Vicinity Map
KeyMap® No. 693E Scale: 1"=2,640'

BENCHMARK(S):

NGS MONUMENT # E 306 DISK SET IN TOP OF CONCRETE MONUMENT, LOCATED 2.0 MILES WEST OF MANVEL, 2 MILES WEST ALONG THE GULF, COLORADO AND SANTA FE RAILWAY FROM THE STATION AT MANVEL, BRAZORIA COUNTY, 0.2 MILE WEST OF A SHELL-ROAD CROSSING, 5-1/2 FEET NORTHWEST OF MILE POLE 38, 39 FEET SOUTH OF THE SOUTH RAIL, 33 FEET NORTH OF THE CENTERLINE OF A DIRT ROAD, 6.7 FEET NORTH OF THE RIGHT-OF-WAY FENCE, 3 FEET WEST OF A WHITE WOODEN WITNESS POST AND SET IN THE TOP OF A CONCRETE POST ABOUT FLUSH WITH THE GROUND.
ELEV.=52.00 (NAVD '88) 1991 ADJUSTMENT

FINAL PLAT
MERIDIANA
DETENTION RESERVE N-2

BEING A SUBDIVISION OF 7.081 ACRES OUT OF THE OLIVER HALL SURVEY, ABSTRACT 203, CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

1 BLOCK 3 RESERVES (7.081 ACRES)

OWNER
GR-M1, LTD.
A TEXAS LIMITED PARTNERSHIP
1602 AVENUE D, SUITE 100
KATY, TEXAS 77493
PH (832) 437-7863

FEBRUARY 4, 2022

EHRA
ENGINEERING THE FUTURE SINCE 1936
10011 MEADOWGLEN LN
HOUSTON, TEXAS 77042
713-784-4500
WWW.EHRAINC.COM
TBPE No. F-726
TBPELS No. 10092300

JOB NO. 081-011-206

PATH:R:\2008\081-011-206\DRAWING\PLAT\081011206V-FP01-DET_RES_N-2 BY:SWJ DATE:2021-10-20

E4263

GENERAL NOTES:

1. Bearing orientation is based on the Texas State Plane Coordinate System of 1983, South Central Zone as determined by GPS measurements. The coordinates shown hereon are Texas South Central Zone No. 4204 State Plane Grid Coordinates (NAD83) and may be brought to surface by applying the following combined scale factor: 0.99986742185.

2. **All boundary corners for the plat shown hereon are set 5/8-inch iron rods with cap stamped** "E.H.R.A. 713-784-4500", unless otherwise noted.

3. According to the Federal Emergency Management Agency Flood Insurance Rate Map, Brazoria County, Texas, Community Panel No. 48039C0110K, dated December 30, 2020, a portion of the property lies within "Zone AE" (areas determined to be within the 100-year floodplain with base flood elevation determined) a portion lies within Shaded Zone "X" (areas determined to be subject to the 500-year flood plain with depths determined less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 100 year flood.) and the remaining portion lies within Unshaded Zone "X" (areas determined to be outside the 500-year floodplain).

   This flood statement does not imply that the property or structures thereon will be free from flooding or flood damage. On rare occasions floods can and will occur and flood heights may be increased by man-made or natural causes. The location of the flood zone was determined by scaling from said FEMA map. The actual location, as determined by elevation contours, may differ. Edminster, Hinshaw, Russ & Associates, Inc. d/b/a EHRA, assumes no liability as to the accuracy of the location of the flood zone limits. This flood statement shall not create liability on the part of Edminster, Hinshaw, Russ & Associates, Inc. d/b/a EHRA.

4. AC. indicates Acres.
   B.C.C.F. NO. indicates Brazoria County Clerk's File Number.
   B.C.D.R. indicates Brazoria County Deed Records.
   B.L. indicates Building Line.
   C.R. No. indicates County Road Number.
   ESMT indicates Easement
   Fnd. indicates Found.
   PG. indicates Page.
   P.O.B. indicates Point Of Beginning.
   P.O.C. indicates Point Of Commencing.
   P.U.E. indicates Public Utility Easement.
   SQ. FT. indicates Square Feet.
   R.O.W. indicates Right-Of-Way.
   U.E./A.E. indicates Utility Easement/Aerial Easement.
   VOL. indicates Volume.

5. The property subdivided in the foregoing plat lies in Brazoria County, the City of Manvel, Brazoria County M.U.D. No. 56, Alvin Independent School District, and Brazoria County Drainage District #5.

6. Property within the boundaries of this plat and adjacent to any drainage easement, ditch, gully, creek, or natural drainage way shall hereby be restricted to keep such drainage ways and easements clear of any fences, buildings, plantings, or other obstructions.

7. The Developer/Homeowners' Association/Brazoria County Municipal Utility District No. 56 shall be responsible for maintenance of all reserves.

8. The terms and conditions of Ordinance numbers 2009-O-03, 2009-O-04, and 2009-O-05 of the City of Manvel, Texas dated February 23, 2009, may affect this plat.

9. All sidewalks shall be constructed in accordance with City of Manvel Ordinance No. 2009-O-04.

10. No residential, commercial, or industrial structure, other than structures necessary to operate the pipeline, shall be erected or moved to a location nearer than 50 feet to any pipeline, except for low pressure distribution system pipeline as defined in section 62-2, as per Manvel Ordinance Sec. 62-116a.

11. No residential, commercial, or industrial structures shall be permitted to be erected nearer than 150 feet from any oil or gas well or related facility other than structures necessary to operate the oil or gas well or facility, as per Manvel Ordinance Sec. 62-116b.

12. No permit shall be issued by the city for the new construction or substantial improvement to any building, structure or improvement on a lot, tract, or parcel of land for which a plat has not been approved by the city and filed of record or certificate of exemption issued. No building, plumbing, electrical, or mechanical permit shall be issued by the city for the construction or repair of any structure on a lot, tract, or parcel of land within a subdivision in which the required storm drainage improvements have not been constructed and the permanent public improvements have not been approved and accepted by the city. This Section applies to the placement or construction of a permitted structure, included manufactured homes as allowed in Chapter 38, Manufactured Housing, other city ordinances, or by State law.

13. This final plat will expire two (2) years after final approval by City Council, if construction of the improvements has not commenced within the two-year initial period or the one-year extension period granted by Council.

14. A one-year maintenance bond in the amount of 100 percent of the total cost of the infrastructure improvements or a one-year letter of credit in the amount of 50 percent of the total cost of the infrastructure improvements shall be required for the public improvements being dedicated to the city.

15. Building permits will not be issued until all storm drainage improvements, which may include detention ponds, have been constructed.

16. The Development Regulations and City Permits of the City of Manvel are required on all property.

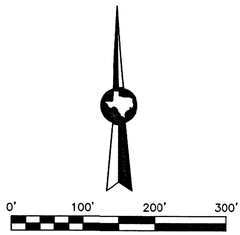
17. Reserve "N-2" provides a total of 1.44 acres of unencumbered open space within the boundary of this plat.

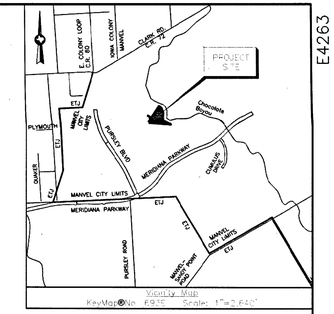
19. The boundary for this plat has a closure in excess of 1:15,000.

20. The drainage on adjacent property will not be impacted by this development.

BENCHMARK(S):

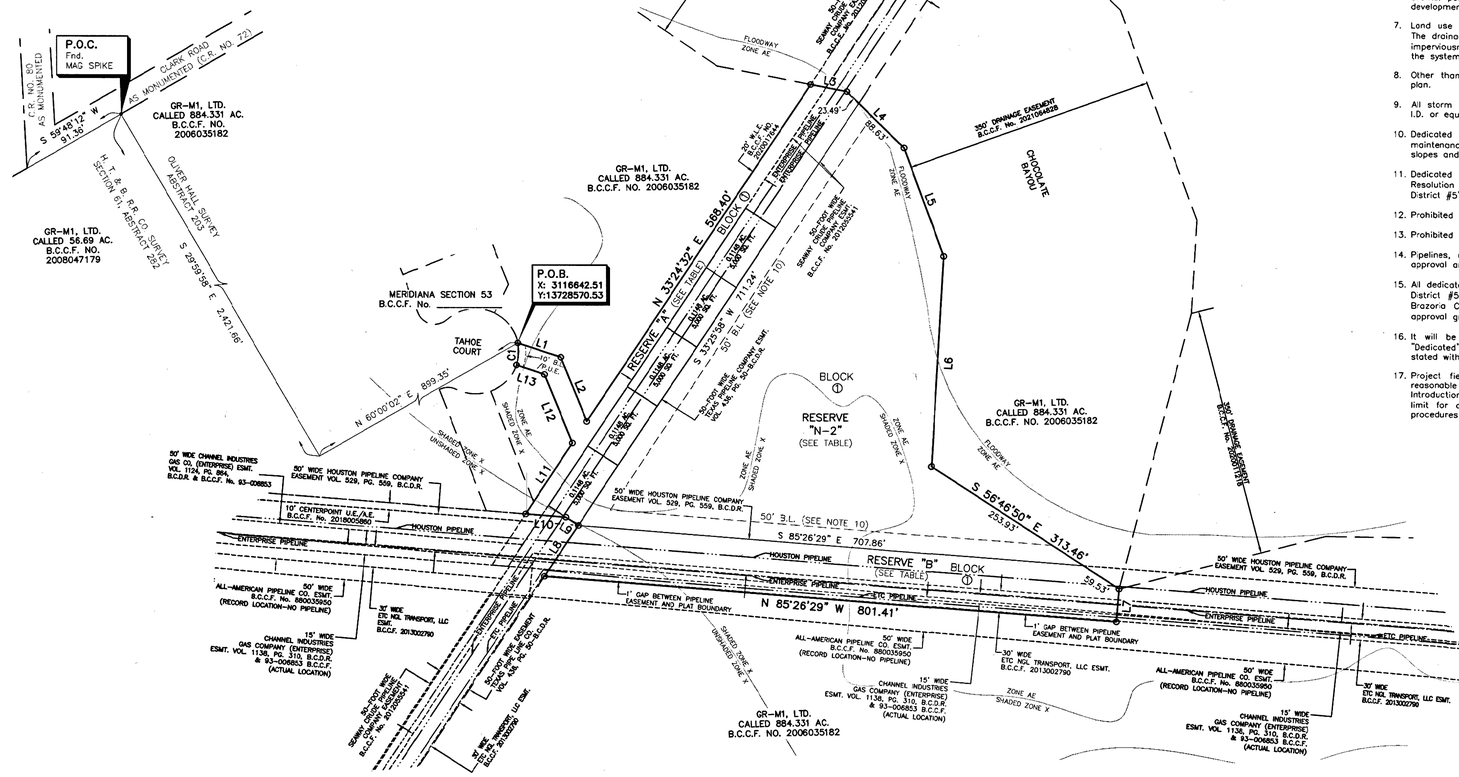
NGS MONUMENT # E 306 DISK SET IN TOP OF CONCRETE MONUMENT, LOCATED 2.0 MILES WEST OF MANVEL, 2 MILES WEST ALONG THE GULF, COLORADO AND SANTA FE RAILWAY FROM THE STATION AT MANVEL, BRAZORIA COUNTY, 0.2 MILE WEST OF A SHELL-ROAD CROSSING, 5-1/2 FEET NORTHWEST OF MILE POLE 38, 39 FEET SOUTH OF THE SOUTH RAIL, 33 FEET NORTH OF THE CENTERLINE OF A DIRT ROAD, 6.7 FEET NORTH OF THE RIGHT-OF-WAY FENCE, 3 FEET WEST OF A WHITE WOODEN WITNESS POST AND SET IN THE TOP OF A CONCRETE POST ABOUT FLUSH WITH THE GROUND.
ELEV.=52.00 (NAVD '88) 1991 ADJUSTMENT





BRAZORIA COUNTY DRAINAGE DISTRICT NO. 5:

1. Slab elevations (finished floor) shall be a minimum of 2 feet above finished grade.
2. All drainage easements shown hereon shall be kept clear of fences, buildings, plantings and other obstructions to the operation and maintenance of drainage facilities.
3. All property shall drain into the drainage easement only through an approved drainage structure.
4. All drainage easements and detention pond reserves shown on this plat will be maintained by the property owners and/or business owners; provided, however, and governmental entity have jurisdiction, including, without limitation, Brazoria County, Texas and Brazoria County Drainage District #5, shall have the right, but not the obligation to enter upon the drainage easements to perform maintenance operations at any time after the date hereof.
5. The property identified in the foregoing plat lies within Brazoria County Drainage District #5.
6. This rural commercial site employs a natural drainage system, which is intended to provide drainage for the site that is similar to that which existed under pre-development conditions. Thus, during large storm events, ponding of water should be expected to occur on the site to the extent it may have prior to development, but such ponding should not remain for an extended period of time.
7. Land use within the subdivision is limited to an average imperviousness of no more than 72 percent. The drainage and/or detention system has been designed with the assumption that this average percent, imperviousness will not be exceeded. If this percentage is to be exceeded, a replat and/or redesign of the system may be necessary.
8. Other than shown hereon, there are no pipeline easements or pipelines within the boundaries of this plan.
9. All storm water drainage pipes, culverts, tiles or other (includes driveway culverts) will be minimum 24" I.D. or equal.
10. Dedicated drainage easement(s) granted to Brazoria County Drainage District #5 for drainage maintenance purposes shall include 45 feet top of bank, plus the sum (footage) of both ditch side slopes and channel bottom and 45 feet of bank on the opposite bank.
11. Dedicated ingress/egress accesses are granted to Brazoria County Drainage District #5 (see District Resolution No 2007-06 & 2007-07). Access will be gated and locked with Brazoria County Drainage District #5's lock.
12. Prohibited use of "metal" pipe in storm water/sewer applications (See District Resolution No. 2007-08).
13. Prohibited use of "rip rap" in storm water/sewer applications. (District Policy).
14. Pipelines, utility lines and other crossing under any Brazoria County Drainage District #5 ditch require approval and permitting prior to construction.
15. All dedicated storm sewer drainage and/or access easements to be granted to Brazoria County Drainage District #5 by the property owner will be initiated and recorded, at the property owner's expense, in Brazoria County, Texas with a "Recorded Document Number" affixed to said easement prior to final approval granted by Brazoria County Drainage District #5 Board of Commissioners.
16. It will be the property owner's responsibility to verify if any Brazoria County Drainage District #5 "Dedicated" drainage easements are on or cross their property. If so, the property owner will comply as stated within the recorded easement.
17. Project field start-up will start within 365 calendar days from date shown here. Continuous and reasonable field site work is expected. See Brazoria County drainage criteria manual section 1, Introduction; Sub-Section 1.5. Plat and Plan approval process, and drainage acceptance procedures; time limit for approval and Brazoria County Drainage District #5 Resolution 2011-1, allowable time(s) and procedures for starting-up approved projects.



LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 71°26'51" E	63.48'
L2	S 21°50'54" E	97.32'
L3	S 79°01'02" E	51.34'
L4	S 45°22'14" E	112.12'
L5	S 19°47'56" E	163.34'
L6	S 03°18'59" W	295.24'
L7	S 04°33'31" W	46.36'
L8	N 33°25'58" E	85.55'
L9	N 56°34'02" W	20.77'
L10	N 85°24'53" W	56.41'
L11	N 33°24'32" E	118.50'
L12	N 21°50'54" W	104.27'
L13	N 71°26'51" W	41.58'

CURVE TABLE					
CURVE	RADIUS	DELTA ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	60.00'	30°00'00"	31.42'	N 03°33'09" E	31.06'

RESERVE TABLE		
RESERVE	RESTRICTED TO	AREA
A	LANDSCAPE, OPEN SPACE, & UTILITY PURPOSES	55,085 SQ.FT. / 1.2641 ACRES
B	LANDSCAPE, OPEN SPACE, & UTILITY PURPOSES	57,743 SQ.FT. / 1.3256 ACRES
N-2	RECREATION, DETENTION, LANDSCAPE, OPEN SPACE, & UTILITY PURPOSES	195,655 SQ.FT. / 4.4916 ACRES
TOTAL		308,483 SQ.FT. / 7.0813 ACRES

FINAL PLAT
MERIDIANA
DETENTION RESERVE N-2

BEING A SUBDIVISION OF 7.081 ACRES OUT OF THE OLIVER HALL SURVEY, ABSTRACT 203; CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

1 BLOCK 3 RESERVES (7.081 ACRES)

OWNER
GR-M1, LTD.
A TEXAS LIMITED PARTNERSHIP
1602 AVENUE D, SUITE 100
KATY, TEXAS 77493
PH (832) 437-7863

FEBRUARY 4, 2022

EHRA
ENGINEERING THE FUTURE SINCE 1936
10011 MEADOWGLEN LN
HOUSTON, TEXAS 77042
713-784-4500
WWW.EHRAINC.COM
TBPE No. F-726
TBPELS No. 10092300

JOB NO. 081-011-206

PATH:R:\2008\081-011-206\DRAWING\PLAT\081011206V-FP01-DET_RES_N-2 BY:SVJ DATE:2021-10-20

City of Manvel

P. O. Box 187
20025 HWY 6
Manvel, Texas 77578

(281) 489-0630
Fax (281) 489-0634

AGENDA REQUEST

REQUEST MUST BE MADE ACCORDING TO THE SUBMITTAL SCHEDULE

Meeting Requested: (Please check applicable meeting)

Planning, Development & Zoning			City Council			Both	☒

Date of Request: February 14, 2022 & February 22, 2022

YOUR REQUEST WILL BE PLACED ON THE NEXT AVAILABLE MEETING DATE. MEETINGS ARE SECOND AND FOURTH MONDAYS FOR PLANNING, DEVELOPMENT & ZONING AND FIRST AND THIRD MONDAYS FOR CITY COUNCIL. THE AGENDAS ARE POSTED TO THE GENERAL PUBLIC AT MANVEL CITY HALL AND ON OUR WEBSITE AT www.cityofmanvel.com. THE AGENDA IS POSTED AND WILL REMAIN POSTED CONTINOUSLY FOR AT LEAST 72 HOURS PRECEDING THE SCHEDULED TIME OF THE MEETING. PLEASE CHECK THE BOARD FOR YOUR MEETING SCHEDULE. WE STRONGLY ENCOURAGE YOU TO ATTEND THE MEETING FOR QUESTIONS AND ANSWERS. IF YOU ARE UNABLE TO ATTEND ACTION MAY BE TABLED UNTIL THE FOLLOWING MEETING.

Person to Speak: Jared Bowlen or Brad Sweitzer

Daytime Phone: 713-784-4500 Fax Number: 713-784-4577

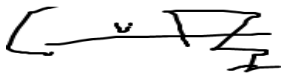
E-mail Address: jbowlin@ehrainc.com or bsweizter@ehrainc.com

Description of Request and Physical Address:

Consideration and possible action to forward with recommendation to City Council, Final Plat for Meridiana Detention Reserve N-2, being a subdivision of 7.081 acres out of the H.T. & B.R.R. Company Survey, Section 61, Abstract 282, and the Oliver Hall Survey, Abstract 203, City of Manvel, Brazoria County, Texas.

Plats:
Preliminary_____
Final X

ALL DOCUMENTATION AND FEES ASSOCIATED WITH THIS AGENDA REQUEST MUST BE SUBMITTED ACCORDING TO THE MEETING SUBMITTAL SCHEDULE WHICH CAN BE FOUND ON OUR WEBSITE.
BY SIGNING THIS AGENDA REQUEST FORM, I ACKNOWLEDGE THAT I HAVE READ AND UNDERSTAND THIS AGENDA REQUEST FORM.



February 9, 2022

SIGNATURE DATE

DEVELOPMENT SERVICES DEPARTMENT
20025 HIGHWAY 6
MANVEL, TX 77578
281-489-0630

Planning, Development and Zoning Commission Plat Report

Plat Name	Meridiana Detention Reserve N-2 Final Plat
Applicant	Lacey Bell, EHRA
PD&Z Meeting Date	February 14, 2022
Recommendation	Denial
Submitted By	Kwasi Bosompem, City Planner

Background

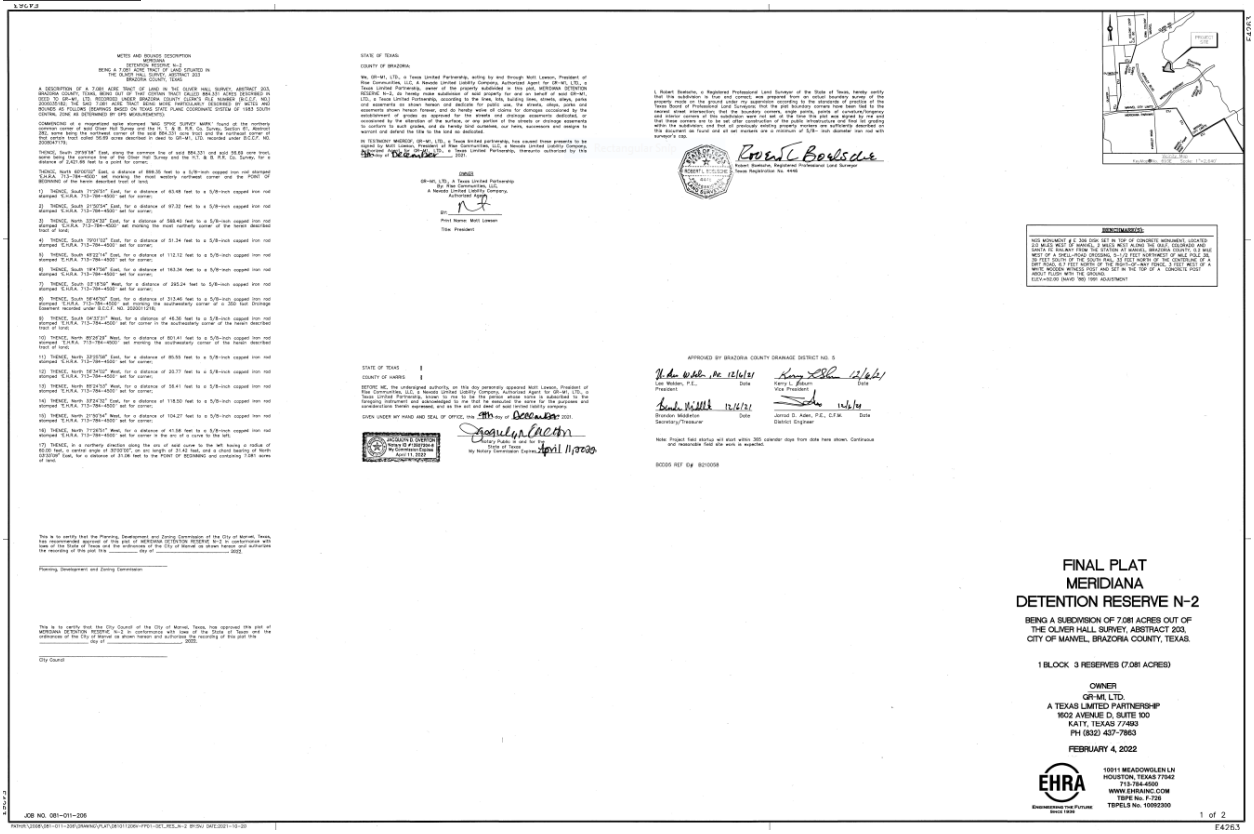
The applicant requested a 30-day plat extension on January 14, 2022, in order to address comments. Staff did not recommend approval of the 30-day plat extension because Meridiana Detention Reserve N-2 Final Plat takes access from Meridiana Section 53 Final Plat and Meridiana Section 54A Final Plat. The applicant has not submitted either Meridiana Section 53 Final Plat and Meridiana Section 54A Final Plat at the previous plat submittal date on January 31, 2022. The Planning, Development and Zoning Commission did not recommend approval of the 30-day plat extension on January 24, 2022, and the City Council did not approve the plat on February 7, 2022. The applicant has resubmitted this final plat for consideration again. All comments have been addressed except one, which is plat access. The Meridiana Detention Reserve N-2 Final Plat takes access from Meridiana Section 53 and 54A. To date, these final plats have not been submitted.

Staff Recommendation

The City recommends denial of the Meridiana Detention Reserve N-2 Final Plat. This final plat does not meet the following criteria:

1. Plat cannot be approved without approval of Meridiana Section 53 Final Plat and Meridiana Section 54A Final Plat (Section 62-41 (b) (31) and Section 62-108).

Plat Exhibit



METES AND BOUNDS DESCRIPTION
DETENTION RESERVE N-2
BEING A 7.081 ACRE TRACT OF LAND SITUATED IN
THE OLIVER HALL SURVEY, ABSTRACT 203
BRAZORIA COUNTY, TEXAS

A DESCRIPTION OF A 7.081 ACRE TRACT OF LAND IN THE OLIVER HALL SURVEY, ABSTRACT 203, BRAZORIA COUNTY, TEXAS, BEING OUT OF AND A PART OF THAT CERTAIN 10.000 ACRE TRACT CONVEYED TO GR-M1, LTD. RECORDED UNDER BRAZORIA COUNTY CLERK'S FILE NUMBER (B.C.C.F. NO.) 2020035182; THE SAID 7.081 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS (BEARINGS ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM OF 1983 SOUTH CENTRAL ZONE, NAD 83 (2011) EPOCH 2010.00):

COMMENCING at a magnetal nail with washer stamped "BGE SPACE SURVEY MARK" found at the northerly common corner of said Oliver Hall Survey and the H. T. & B. R.R. Co. Survey, Section 81, Abstract 282, same being the northwest corner of the said 884.331 acre tract and the northwest corner of that certain tract called 35.89 acres described in deed to GR-M1, LTD. recorded under B.C.C.F. NO. 2020067774;

THENCE, South 29°34'58" East, along the common line of said 884.331 and said 35.89 acre tract, same being the common line of the Oliver Hall Survey and the H.T. & B. R.R. Co. Survey, for a distance of 2,432.96 feet to a point for corner;

THENCE, North 60°25'02" East a distance of 899.35 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner at the most westerly northwest corner and the POINT OF BEGINNING of the herein described tract of land;

1) THENCE, South 71°26'01" East, for a distance of 63.48 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

2) THENCE, South 21°50'54" East, for a distance of 97.32 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

3) THENCE, North 73°24'35" East, for a distance of 568.40 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set marking the most northerly corner of the herein described tract of land;

4) THENCE, South 70°01'10" East, for a distance of 31.34 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

5) THENCE, South 19°22'14" East, for a distance of 112.12 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

6) THENCE, South 19°47'59" East, for a distance of 163.34 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

7) THENCE, South 19°18'56" West, for a distance of 293.24 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

8) THENCE, South 18°45'50" East, for a distance of 312.40 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner in the southeasterly corner of a 350 foot Drainage Easement recorded under B.C.C.F. NO. 2020012716;

9) THENCE, South 09°33'17" West, for a distance of 48.36 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner in the southeasterly corner of the herein described tract of land;

10) THENCE, North 89°24'29" West, for a distance of 601.41 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set marking the southeasterly corner of the herein described tract of land;

11) THENCE, North 23°05'58" East, for a distance of 85.55 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

12) THENCE, North 18°24'02" West, for a distance of 20.77 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

13) THENCE, North 69°24'10" West, for a distance of 56.41 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

14) THENCE, North 69°24'10" West, for a distance of 118.50 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

15) THENCE, North 21°52'54" West, for a distance of 104.27 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

16) THENCE, North 71°26'01" West, for a distance of 41.58 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner in the arc of a curve to the left;

17) THENCE, in a northerly direction along the arc of said curve to the left having a radius of 60.00 feet, a central angle of 33°00'00", an arc length of 31.42 feet, and a chord bearing of North 03°03'58" East, for a distance of 31.06 feet to the POINT OF BEGINNING and containing 7.081 acres of land.

This is to certify that the Planning, Development and Zoning Commission of the City of Manvel, Texas has approved this plat of MERIDIANA DETENTION RESERVE N-2 in conformance with the laws of the State of Texas and the ordinances of the City of Manvel as shown hereon and authorizes the recording of this plat this _____ day of _____, 2022.

Planning, Development and Zoning Commission

This is to certify that the City Council of the City of Manvel, Texas, has approved this plat of MERIDIANA DETENTION RESERVE N-2 in conformance with laws of the State of Texas and the ordinances of the City of Manvel as shown hereon and authorizes the recording of this plat this _____ day of _____, 2022.

City Council

STATE OF TEXAS
COUNTY OF BRAZORIA

We, GR-M1, LTD., a Texas Limited Partnership, acting by and through Matt Lawson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR-M1, LTD., a Texas Limited Partnership, owner of the property subdivided in this plat, MERIDIANA DETENTION RESERVE N-2, a subdivision in Brazoria County, Texas, according to the lines, lots, building lines, streets, alleys, parks and easements as shown hereon and dedicate for public use, the streets, alleys, parks and easements shown hereon forever, and do hereby waive all claims for damages occasioned by the establishment of grades as approved for the streets and drainage easements dedicated, or occasioned by the alteration of the surface portion thereof by reason of such establishment of grades to conform to such grades, and do hereby bind ourselves, our heirs, successors and assigns to warrant and defend the title to the land so dedicated.

IN TESTIMONY WHEREOF, GR-M1, LTD., a Texas limited partnership, has caused these presents to be signed by Matt Lawson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR-M1, LTD., a Texas Limited Partnership, thereunto authorized by this the _____ day of _____, 2022.

OWNER
GR-M1, LTD., a Texas Limited Partnership
By: Rise Communities, LLC,
a Nevada Limited Liability Company,
Authorized Agent

BY: _____
Print Name: Matt Lawson
Title: President

STATE OF TEXAS
COUNTY OF HARRIS

BEFORE ME, the undersigned authority, on this day personally appeared Matt Lawson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR-M1, LTD., a Texas Limited Partnership, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed, and as the act and deed of said limited liability company.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 9th day of December 2021.

Notary Public in and for the State of Texas
My Notary Commission Expires April 11, 2023

I, Robert Boelsche, a Registered Professional Land Surveyor of the State of Texas, hereby certify that this subdivision is true and correct, was prepared from an actual boundary survey of the property made on the ground under my supervision according to the standards of practice of the Texas Board of Professional Land Surveying, that all boundary corners, angle points, points of curvature/tangency and interior corners of this subdivision were set as noted, that the plat was signed by me and sealed with my seal on the date of the last survey of the property, that all lots, streets, and alleys within the subdivision and first lot previously existing property markers are sufficiently described on this document as found and all set markers are a minimum of 5/8-inch diameter iron rod with surveyor's cap.

Robert Boelsche, Registered Professional Land Surveyor
Texas Registration No. 4446

APPROVED BY BRAZORIA COUNTY DRAINAGE DISTRICT NO. 5

Lee Walden, P.E., President — Date 12/6/21
Kerry L. Baum, Vice President — Date 12/6/21
Brandon Middleton, Secretary/Treasurer — Date 12/6/21
Jarrod D. Ader, P.E., C.F.M., District Engineer — Date 12/6/21

Note: Project field staking will start within 365 calendar days from date here shown. Continuous and reasonable field site work is expected.

BCDDS REF ID# B210058

BENCHMARK(S):

NGS MONUMENT # E 326 DISK SET IN TOP OF CONCRETE MONUMENT, LOCATED 2.0 MILES WEST OF MANVEL, 2 MILES WEST ALONG THE OLD T.&P. COLORADO AND SANTA FE RAILWAY FROM THE STATION AT MANVEL, BRAZORIA COUNTY, 12 MILE EAST OF THE SOUTH END OF A BRIDGE OVER A DRAINAGE DITCH, 50 FEET SOUTH OF THE SOUTH RAIL, 53 FEET NORTH OF THE CENTERLINE OF A DIRT ROAD, 5.7 FEET NORTH OF THE EDGE OF A WIRE FENCE, 3 FEET WEST OF A WOOD FENCE POST, 1.0 FOOT HIGH AND SET IN THE TOP OF A CONCRETE POST WHICH PROJECTS 0.2 FOOT.
ELEV.=60.90 (NAVD '88) 1991 ADJUSTMENT

FINAL PLAT
MERIDIANA
DETENTION RESERVE N-2

BEING A SUBDIVISION OF 7.081 ACRES OUT OF
THE OLIVER HALL SURVEY, ABSTRACT 203,
CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

1 BLOCK 3 RESERVES (7.081 ACRES)

OWNER
GR-M1, LTD.
A TEXAS LIMITED PARTNERSHIP
1602 AVENUE D, SUITE 100
KATY, TEXAS 77493
PH (832) 437-7863

FEBRUARY 4, 2022

EHRA
ENGINEERING FOR THE FUTURE
SINCE 1959
10911 MEADOWGLEN LN
HOUSTON, TEXAS 77042
713-784-4500
WWW.EHRAINC.COM
TBPE No. F-726
TBPELS No. 10092300

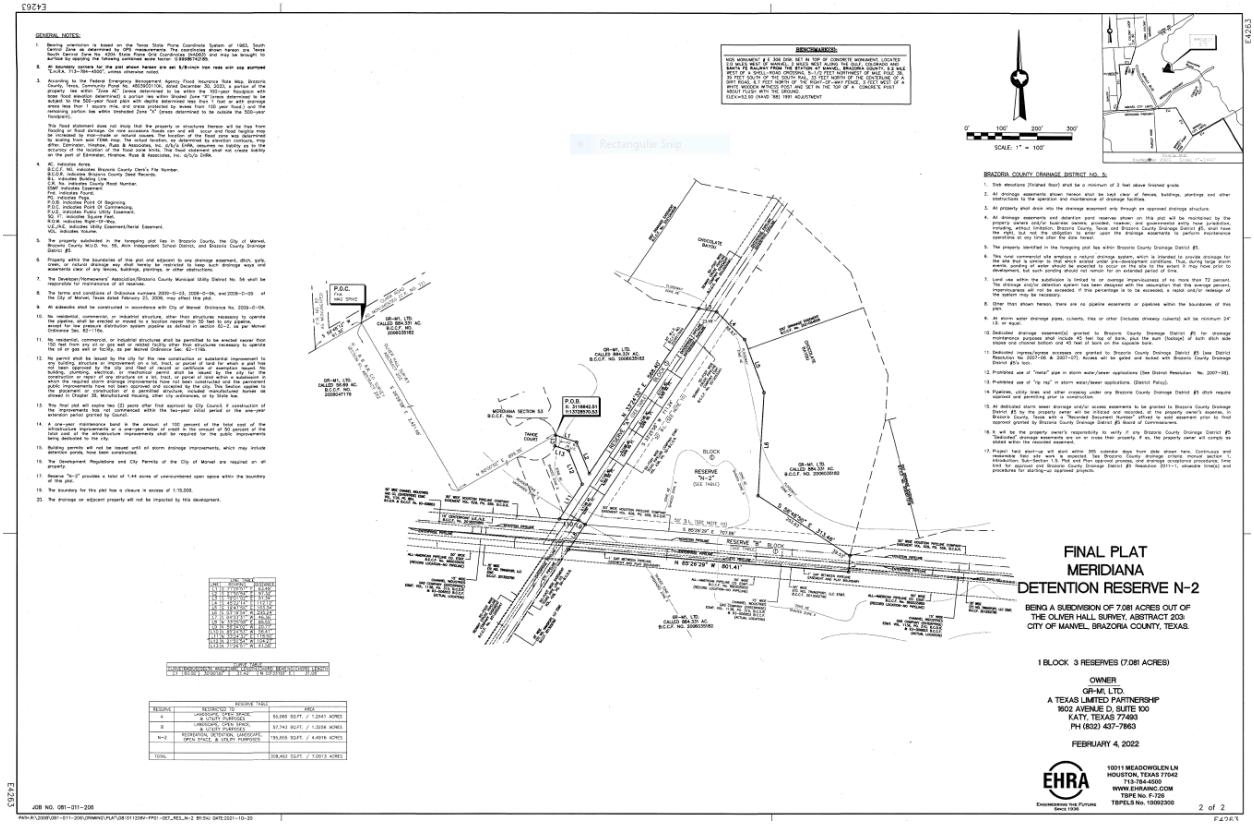
JOB NO. 081-011-206

1 of 2

E4263

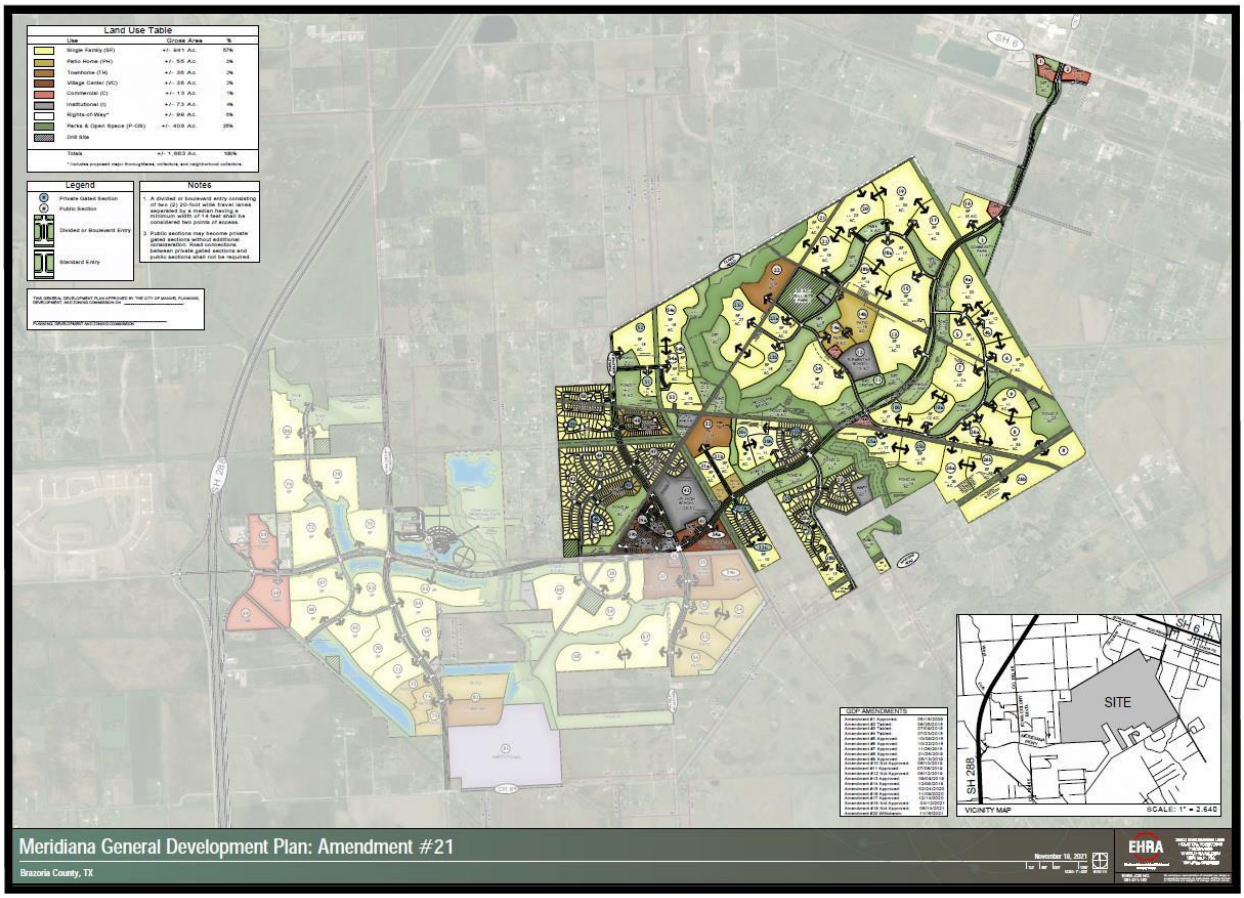
Development Services Department
20025 Highway 6
Manvel, TX 77578
281-489-0630

Plat Exhibit



DEVELOPMENT SERVICES DEPARTMENT
20025 HIGHWAY 6
MANVEL, TX 77578
281-489-0630

Meridiana General Development Plan Amendment No. 21 (dated November 19, 2021)



MANVEL CITY COUNCIL DATA SHEET

MEETING DATE: February 22, 2022

TOPIC: Subdivision variance request for property located at 6336 Del Bello Spur, seeking to vary Chapter 62, Section 62-111, *Additional Street Requirements*.

BACKGROUND: The property is 11.7221 acres and zoned Open-Single Family Residential (O-SFR) District. The property owner would like to construct a single-family residence and barn on the proposed lot. On January 3, 2022, the City Council approved a subdivision variance with a development agreement for this property. The subdivision variance request was for Section 62-111, *Additional Street Requirements*. The property owners received relief from construction of one-half of Del Bello Spur to concrete curb and gutter. Since the subdivision variance was approved by City Council, a minor plat was filed with the City for approval. Through staff's review, it was found the property has an unimproved 60-foot-wide public road easement located on the rear third of the property. The City's subdivision ordinance (Section 62-111) requires the full width of the road be constructed to concrete curb and gutter through the property. Alternatively, the property owner could abandon the right-of-way. The property owners have decided to seek relief from the Council to Section 62-111 rather than abandon the road easement. Abandoning the road easement would take coordination and participation from other property owners that share the same 60-foot-wide public road easement. This could delay the property owner from constructing their single-family home indefinity to abandon the public road easement. The property owners have agreed to dedicate the right-of-way through their property. Because the full 60-foot width construction of a right-of-way would burden the property owner, staff is recommending approval of the subdivision variance request with development agreement.

RECOMMENDATION: The staff recommends approval of the variance request to Section 62-111 with two conditions as specified in the development agreement: 1) the subdivision variance will expire upon change of use from one (1) single-family detached structure or 2) the subdivision variance will expire when the property is replatted into one or more lots/reserves.

ATTACHMENTS: Application, Development Agreement, Proposed Plat, Vicinity Zoning Map, and Vicinity Aerial Map

FUNDING ISSUES

_**X**_ **Not applicable**
___ **Not budgeted**
___ **Full amount already budgeted**
___ **Funds to be transferred from Acct.#**

SUBMITTING STAFF MEMBER Jessica Rodriguez	**FINANCE DIRECTOR APPROVAL** _____ **CITY MANAGER APPROVAL** _____

DEVELOPMENT AGREEMENT (FOR VARIANCE)

STATE OF TEXAS §
§
COUNTY OF BRAZORIA §

This Development Agreement executed as of the ____ day of _____, 2022, is by and between the City of Manvel, Texas, ("City") and Thomas R. Laird and Lisa P. Laird, property owners of certain hereinafter described property located within the city, (together known as "Developer"), all collectively referred to as the "Parties." This Agreement is in regard to the platting of a 11.7221-acre tract of land located at 6336 Del Bello Spur.

WHEREAS, Developer wishes to construct a new single-family structure on the 11.7221-acre tract of land located within the city limits of the City of Manvel, more fully described and depicted as "Lot 1, Thomas R. Laird Subdivision" in the proposed minor plat attached as Exhibit "A", attached hereto; and,

WHEREAS, construction of a single-family structure will require approval of a plat and compliance with the city's subdivision ordinance; and

WHEREAS, Section 62-111 of the city code requires construction of all streets in accordance with the city's design criteria; construction of all roadways within the development in accordance with the city's minor street standards; and construction of perimeter streets in conjunction with plat approval; and

WHEREAS, pursuant to Section 62-5 of the city code, the Developer has applied for a variance to construct this perimeter road requirement;

NOW THEREFORE, for and in consideration of the premises and mutual obligations, covenants, and benefits hereinafter set forth, if said variance is granted by the city council, the Parties agree to the conditions, as follows:

1. PROJECT

1.01 Location. The property that is the subject of this agreement is all the property legally described as: being a 11.7221-acre tract as recorded in Clerk's File No. 2020067280 of the Brazoria County Official Records also being a portion of Lot 12 of the Parker Subdivision of Section 74, H.T. & B.R.R. as recorded in Volume 2, Page 66, of the Brazoria County Plat Records out of the Charles O'Donnell Survey, Abstract 493 in Brazoria County, Texas (the "Property"). The Property is more fully described and depicted in the proposed minor plat attached as Exhibit "A", attached hereto.

1.02 Project Description. This Agreement is in regard to the construction of a proposed single-family structure on the Property, owned by Developer.

1.03 The Property has never been platted. To construct a single-family structure on the Property will require approval of a plat and compliance with the city's subdivision ordinance. Section 62-111 of the city's subdivision requires construction of all streets in accordance with the city's design criteria; construction of all roadways within the development in accordance with the city's minor street standards; and construction of perimeter streets in conjunction with plat approval. The Developer has applied to vary this requirement for his property.

2. CITY APPROVAL

2.01 Pursuant to its authority under Section 62-5 of the city code, the city agrees to allow the Developer to vary the requirements of Section 62-111 of the city's subdivision ordinance for the unimproved 60-foot wide public road easement, with conditions.

2.02 Conditions: The required conditions are as follows:

(i) This Agreement will expire upon change of use from one (1) single-family detached structure; or

(ii) This Agreement will expire when the Property is replatted into one or more lots/reserves.

2.03 City shall record this agreement with the Brazoria County Clerk and evidence the agreement on a "plat note" on the plat of said Property. Developer shall be responsible for the cost of recordation.

3. DEVELOPER COVENANTS

3.01 The Developer agrees to following:

(i) Other than permits for the construction of one single-family structure and accessory residential structures, the city shall not issue any other construction permit or approve any further plat/re-plat of the Property;

(ii) Developer agrees to begin construction of the single-family structure, and diligently pursue to completion, within one-year of city council approval;

(iii) Developer agrees to pay the cost of recordation of this agreement within thirty (30) days of invoice by the city.

3.02 Developer acknowledges that the city's covenants are contingent upon the Developer constructing the proposed single-family structure. Failure of the Developer to begin to construct the single-family structure, and diligently pursue completion, within one-year of city council approval shall constitute failure of this condition and the agreement shall automatically be null and void.

4. MISCELLANEOUS

4.01 Assignment. This Agreement evidencing said variance, with conditions, shall run with the land and shall bind and benefit the respective Parties and their legal successors in interest.

4.02 Amendment or Modification. Except as otherwise provided in this Agreement, this Agreement shall be subject to change, amendment or modification only in writing, and by the signatures and mutual consent of the Parties.

4.03. Parties in Interest. This Agreement shall be for the sole and exclusive benefit of the Parties hereto and shall not be construed to confer any rights upon any third party. Developer shall not be a third-party beneficiary to any contract the city has with any other party for the engineering, design, or construction of said improvements.

4.04. Remedies Not Exclusive. The rights and remedies contained in this Agreement shall not be exclusive, but shall be cumulative of all rights and remedies now or hereinafter existing, by law or in equity.

4.05. Waiver. The failure of any party to insist in any one or more instances on the performance of any of the terms, covenants or conditions of this Agreement, or to exercise any of its rights, shall not be construed as a waiver or relinquishment of such term, covenant, or condition, or right with respect to further performance.

4.06. Entire Agreement. This Agreement constitutes the entire agreement between the Parties related to the subject matter of this Agreement and supersedes any and all prior agreements, whether oral or written, dealing with the subject matter of this Agreement.

4.07. Venue. This Agreement shall be performable and enforceable in Brazoria County, Texas, and shall be construed in accordance with the laws of the State of Texas.

4.08. Severability. If any term or provision of this Agreement is held to be invalid, void or unenforceable by a court of competent jurisdiction, the remainder of the terms and provisions of this Agreement shall remain in full force and effect and shall not in any way be invalidated, impaired or affected.

4.09. Notices. Any notice provided or permitted to be given under this Agreement must be in writing and may be served by (i) depositing the same in the United States mail, addressed to the party to be notified, postage prepaid, registered or certified mail, return receipt requested; or (ii) by delivering the same in person to such party; or (iii) by overnight or messenger delivery service that retains regular records of delivery and receipt; or (iv) by facsimile; provided a copy of such notice is sent within one (1) day thereafter by another method provided above.

The initial addresses of the parties for the purpose of notice under this Agreement shall be as follows:

If to City: City of Manvel
20031 Morris Avenue
Manvel, Texas 77578
ATTN: City Manager

If to Developer: Thomas R. Laird and Lisa P. Laird
P.O. Box 20364
Houston, TX 77225-0364

This Agreement may be executed in multiple counterparts, each of which shall be deemed an original, but all of which when taken together shall constitute one and the same instrument.

CITY OF MANVEL:

_____
Debra Davison, Mayor

ATTEST:

_____
Tammy Bell, City Secretary

THE STATE OF TEXAS §

COUNTY OF BRAZORIA §

This instrument was acknowledged before me on the ____ day of _____, 20__, by DEBRA DAVISON, as Mayor of the City of Manvel, Texas, on behalf of said City of Manvel.

_____
Notary, State of Texas

(NOTARY SEAL)

Thomas R. Laird:

By: _____
Name: Thomas R. Laird

THE STATE OF TEXAS §

COUNTY OF BRAZORIA §

This instrument was acknowledged before me on the ____ day of _____, 20__, by _____, as property owner.

_____
Notary, State of Texas

(NOTARY SEAL)

Lisa P. Laird:

By: _____
Name: Lisa P. Laird

THE STATE OF TEXAS §

COUNTY OF BRAZORIA §

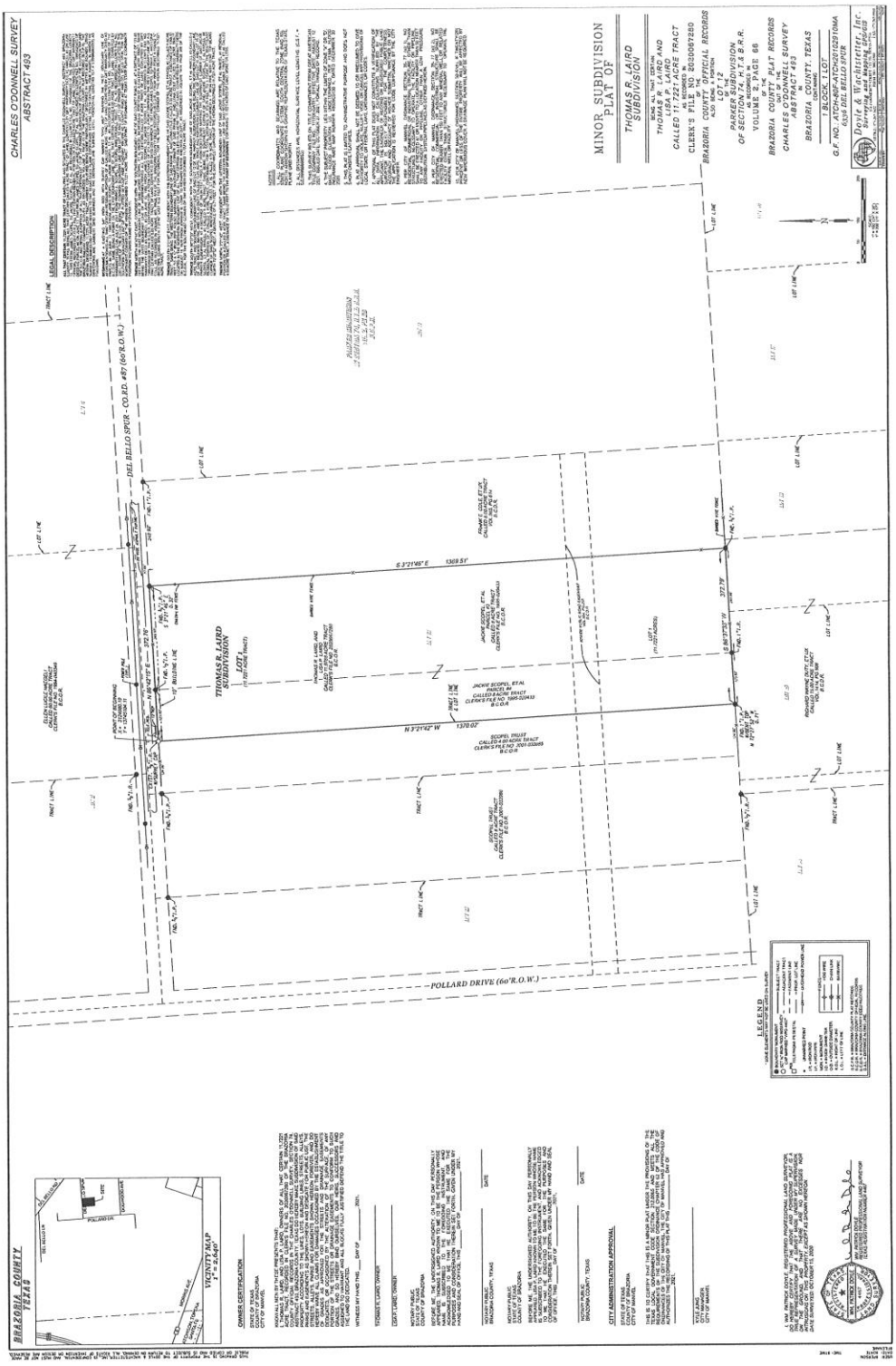
This instrument was acknowledged before me on the ____ day of _____, 20__, by _____, as property owner.

_____
Notary, State of Texas

(NOTARY SEAL)

Exhibit A

Being a 11.7221-acre tract as recorded in Clerk's File No. 2020067280 of the Brazoria County Official Records also being a portion of Lot 12 of the Parker Subdivision of Section 74, H.T. & B.R.R. as recorded in Volume 2, Page 66, of the Brazoria County Plat Records out of the Charles O'Donnell Survey, Abstract 493 in Brazoria County, Texas.



CITY OF MANVEL

http://www.cityofmanvel.com

PO Box 187
Manvel, Texas 77578

Phone: (281) 489-0630
Fax: (281) 489-0634

Subdivision Variance Application

Applicant Information

Applicant (if not owner): Thomas and Lisa Laird
Phone: 713 922-1781 e-mail: lisalaird4@gmail.com
Owner: Thomas and Lisa Laird
Owner Address: PO Box 20364 City Houston State Tx Zip 77225
Phone: 713 922-1781 e-mail: lisalaird4@gmail.com

Property Information

Site Address: 63316 Del Bello Spur
Legal description (from deed): 11.7221 Acre tract
(Property must be legally subdivided or be lot of record)
Brazoria County Identification Number: 236562

Description of Subdivision Variance Request

exemption from Ord Sec 62-111
required improvement of adjacent roadways.

Detailed Explanation of Subdivision Variance Request

Please answer, on a separate sheet of paper if necessary, the following questions:

o What are the special circumstances or conditions affecting the land involved such that the strict application of the provisions of the subdivision code would require a variance to the city's subdivision ordinance?

To build a single family home

o How is the variance necessary for the preservation and enjoyment of a substantial property right of the applicant?

Requiring the homeowner to improve the 60' ROW or abandon it would place a large economic burden on the owner

o Describe how the granting of the variance will not be detrimental to the public health, safety or welfare, or injurious to other property in the area.

The area is undeveloped residential/ agricultural land w/ort traffic flow.

o Describe how the granting of the variance will not have the effect of preventing the orderly subdivision of other land in the area in accordance with the provisions of the subdivision ordinance.

Granding a variance for a single family residence will not establish precedence for any significant developments in the area.

Applicant Authorization

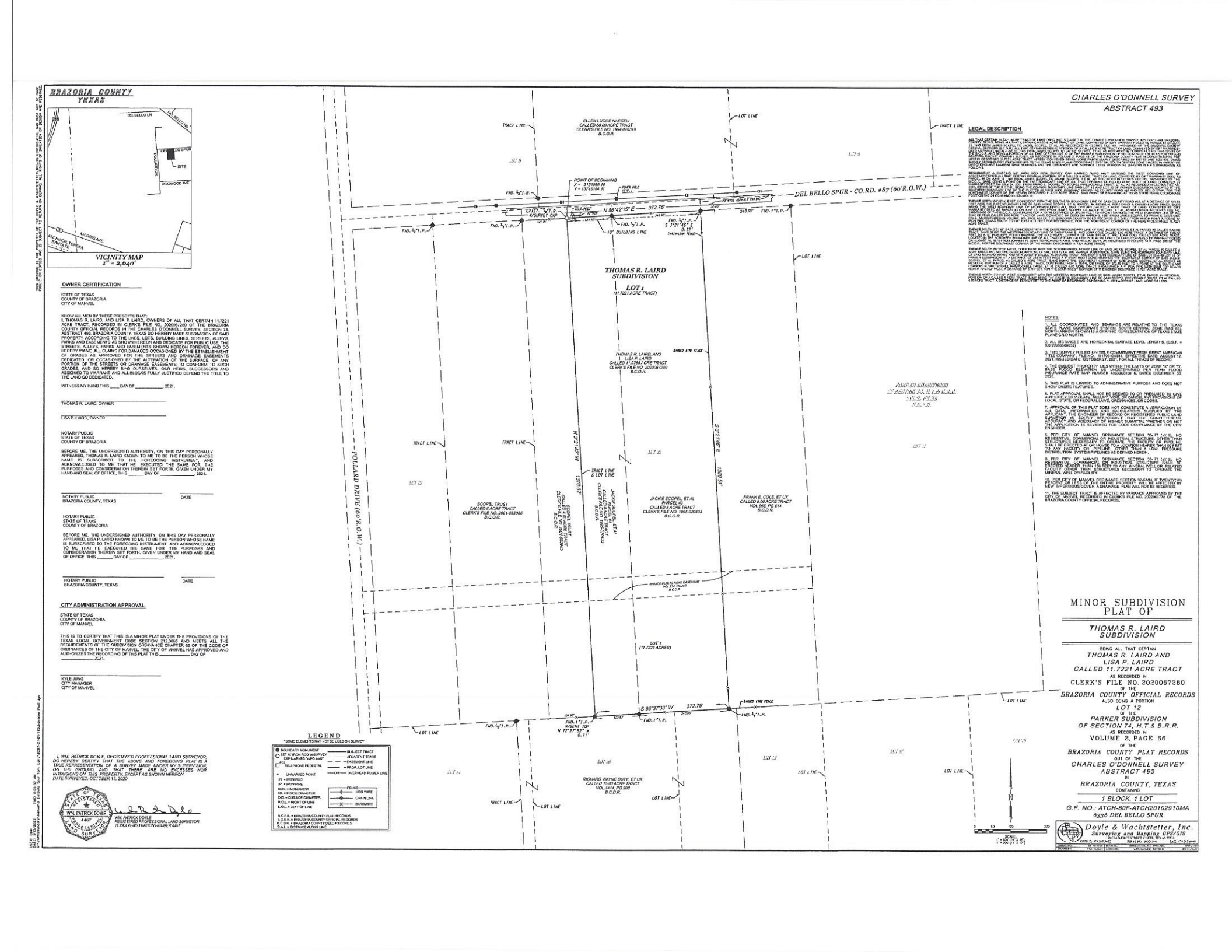
I authorize the City of Manvel to conduct any site visits necessary to evaluate this subdivision variance application.

I hereby state that I have prepared this application and that, to the best of my knowledge, the information contained herein is complete, accurate, and a true representation of the subdivision variance request. I further attest that I have the authority to submit this application and agree to comply with any and all conditions of subdivision variance approval. I agree to provide any additional information requested by the City of Manvel as they deem necessary for the processing of this application.

Applicant Signature

2-10-22
Date

Submit variance request material to the Permit Department, City of Manvel, 20025 Highway 6 Manvel, Texas 77578 with the plat application. Failure to pay the required application fees or provide the information, drawings, or attachments in the form as requested by the City shall automatically mark the application as 'incomplete' and such application shall not be placed on the agenda for consideration until all information, fees, drawings, or attachments are deemed to be complete and in proper form by city staff.


BRAZORIA COUNTY
TEXAS
VICINITY MAP
1" = 2,640'
CHARLES O'DONNELL SURVEY
ABSTRACT 493
LEGAL DESCRIPTION
OWNER CERTIFICATION
STATE OF TEXAS
COUNTY OF BRAZORIA
CITY OF MANVEL
KNOW ALL MEN BY THESE PRESENTS THAT:
I, THOMAS R. LAIRD, AND LISA P. LAIRD, OWNERS OF ALL THAT CERTAIN 11.7221 ACRE TRACT, RECORDED IN CLERK'S FILE NO. 2020067280 OF THE BRAZORIA COUNTY OFFICIAL RECORDS IN THE CHARLES O'DONNELL SURVEY, SECTION 74, ABSTRACT 493, BRAZORIA COUNTY, TEXAS DO HEREBY MAKE SUBDIVISION OF SAID PROPERTY ACCORDING TO THE LINES, LOTS, BUILDING LINES, STREETS, ALLEYS, PARKS AND EASEMENTS AS SHOWN HEREON AND DEDICATE FOR PUBLIC USE THE STREETS, ALLEYS, PARKS AND EASEMENTS SHOWN HEREON FOREVER, AND DO HEREBY WAIVE ALL CLAIMS FOR DAMAGES OCCASIONED BY THE ESTABLISHMENT OF GRADES AS APPROVED FOR THE STREETS AND DRAINAGE EASEMENTS DEDICATED, OR OCCASIONED BY THE ALTERATION OF THE SURFACE, OF ANY PORTION OF THE STREETS OR DRAINAGE EASEMENTS TO CONFORM TO SUCH GRADES, AND SO HEREBY BIND OURSELVES, OUR HEIRS, SUCCESSORS AND ASSIGNED TO WARRANT AND ALL BLOCKS FULLY JUSTIFIED DEFEND THE TITLE TO THE LAND SO DEDICATED.
WITNESS MY HAND THIS ____ DAY OF _____, 2021.
THOMAS R. LAIRD, OWNER
LISA P. LAIRD, OWNER
NOTARY PUBLIC
STATE OF TEXAS
COUNTY OF BRAZORIA
BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED, THOMAS R. LAIRD KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREIN SET FORTH, GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS _____ DAY OF _____, 2021.
NOTARY PUBLIC
BRAZORIA COUNTY, TEXAS
DATE
NOTARY PUBLIC
STATE OF TEXAS
COUNTY OF BRAZORIA
BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED, LISA P. LAIRD KNOWN TO ME, TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FORECOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREIN SET FORTH, GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS _____ DAY OF _____, 2021.
NOTARY PUBLIC
BRAZORIA COUNTY, TEXAS
DATE
CITY ADMINISTRATION APPROVAL
STATE OF TEXAS
COUNTY OF BRAZORIA
CITY OF MANVEL
THIS IS TO CERTIFY THAT THIS IS A MINOR PLAT UNDER THE PROVISIONS OF THE TEXAS LOCAL GOVERNMENT CODE SECTION 212.0065 AND MEETS ALL THE REQUIREMENTS OF THE SUBDIVISION ORDINANCE CHAPTER 62 OF THE CODE OF ORDINANCES OF THE CITY OF MANVEL. THE CITY OF MANVEL HAS APPROVED AND AUTHORIZES THE RECORDING OF THIS PLAT THIS _____ DAY OF _____ 2021.
KYLE JUNG
CITY MANAGER
CITY OF MANVEL
I, WM. PATRICK DOYLE, REGISTERED PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT THE ABOVE AND FOREGOING PLAT IS A TRUE REPRESENTATION OF A SURVEY MADE UNDER MY SUPERVISION, ON THE GROUND, AND THAT THERE ARE NO EXCESSES NOR INTRUSIONS ON THIS PROPERTY, EXCEPT AS SHOWN HEREON.
DATE SURVEYED: OCTOBER 15, 2020
WM. PATRICK DOYLE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NUMBER 4467
LEGEND
* SOME ELEMENTS MAY NOT BE USED ON SURVEY
SUBJECT TRACT
ADJACENT TRACT
EASEMENT LINE
PROP. LOT LINE
OVERHEAD POWER LINE
HOG WIRE
CHAIN LINK
BARBWIRE
B.C.P.R. = BRAZORIA COUNTY PLAT RECORDS
B.C.O.R. = BRAZORIA COUNTY OFFICIAL RECORDS
B.C.D.R. = BRAZORIA COUNTY DEED RECORDS
D.A.L. = DISTANCE ALONG LINE
NOTES
1. ALL COORDINATES AND BEARINGS ARE RELATIVE TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (NAD 83), DERIVED BY GPS OBSERVATION IN A GRAVITY REFERENCED ORIENTATION FOR TEXAS STATE PLANE GRID NORTH.
2. ALL DISTANCES ARE HORIZONTAL SURFACE LEVEL LENGTHS. (C.S.F. = 0.99995680053)
3. THIS SURVEY RELIED ON TITLE COMMITMENT FROM GREAT AMERICAN TITLE COMPANY, G.F. NO. 1-80F-ATCH-2010291, EFFECTIVE AUGUST 12, 2021, ISSUED DATE OCTOBER 27, 2021, FOR ALL THINGS OF RECORD.
4. THE SUBJECT PROPERTY LIES WITHIN THE LIMITS OF ZONE "X" OR "E", BASE FLOOD ELEVATION US UNDETERMINED, PER FEMA FLOOD INSURANCE RATE MAP NUMBER 48039C0010 K, DATED DECEMBER 30, 2020.
5. THIS PLAT IS LIMITED TO ADMINISTRATIVE PURPOSE AND DOES NOT SHOW ON-SITE FEATURES.
6. PLAT APPROVAL SHALL NOT BE DEEMED TO OR PRESUMED TO GIVE AUTHORITY TO VIOLATE, NULLIFY, VOID, OR CANCEL ANY PROVISIONS OF LOCAL, STATE, OR FEDERAL LAWS, ORDINANCES, OR CODES.
7. APPROVAL OF THIS PLAT DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION, AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD OR REGISTERED PUBLIC LAND SURVEYOR IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY AND ADEQUACY OF HIS/HER SUBMITTAL WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY THE CITY ENGINEER.
8. PER CITY OF MANVEL ORDINANCE SECTION 35-77 (ld 2), NO RESIDENTIAL, COMMERCIAL OR INDUSTRIAL STRUCTURE, OTHER THAN STRUCTURES NECESSARY FOR PRIVATE, PUBLIC, OR INDUSTRIAL PIPELINE, SHALL BE CONSTRUCTED OR ERECTED WITHIN 150 FEET MEASURED FROM ANY FACILITY, EXCEPT A PIPELINE, OTHER THAN A LOW PRESSURE DISTRIBUTION SYSTEM PIPELINES AS DEFINED HEREIN.
9. PER CITY OF MANVEL ORDINANCE SECTION 35-77 (ld 2), NO RESIDENTIAL, COMMERCIAL OR INDUSTRIAL STRUCTURE SHALL BE PLACED WITHIN 1,320 FEET OF ANY MINERAL WELL OR RELATED FACILITY, EXCEPT TEMPORARY FACILITIES NECESSARY TO OPERATE THE MINERAL WELL OR FACILITY.
10. PER CITY OF MANVEL ORDINANCE SECTION 52-67(b), IF TWENTY(20) PERCENT OR LESS OF THE ENTIRE PROPERTY WILL BE AFFECTED BY NEW SUPERVISORS CORNER, A DRAINAGE PLAN WILL NOT BE REQUIRED.
11. THE SUBJECT TRACT IS AFFECTED BY VARIANCE APPROVED BY THE CITY OF MANVEL RECORDED IN CLERK'S FILE NO. 2022062772 OF THE BRAZORIA COUNTY OFFICIAL RECORDS.
MINOR SUBDIVISION PLAT OF
THOMAS R. LAIRD SUBDIVISION
BEING ALL THAT CERTAIN
THOMAS R. LAIRD AND LISA P. LAIRD CALLED 11.7221 ACRE TRACT
AS RECORDED IN
CLERK'S FILE NO. 2020067280
OF THE
BRAZORIA COUNTY OFFICIAL RECORDS
ALSO BEING A PORTION
LOT 12
OF THE
PARKER SUBDIVISION OF SECTION 74, H.T.& B.R.R.
AS RECORDED IN
VOLUME 2, PAGE 56
OF THE
BRAZORIA COUNTY PLAT RECORDS
OUT OF THE
CHARLES O'DONNELL SURVEY ABSTRACT 493
IN
BRAZORIA COUNTY, TEXAS
CONTAINING
1 BLOCK, 1 LOT
G.F. NO.: ATCH-80F-ATCH2010291OMA
6336 DEL BELLO SPUR
Doyle & Wachtstetter, Inc.
Surveying and Mapping GPS/GIS
ELLEN LUCILE NAEGELI CALLED 50.00 ACRE TRACT CLERK'S FILE NO. 1994-043049 B.C.O.R.
POINT OF BEGINNING X = 3124380.10 Y = 13745194.11
FND. ½" I.R.
POKE PILE (TYP.)
DEL BELLO SPUR - CO.RD. #87 (60'R.O.W.)
20' WIDE ASPHALT PAVING
N 86°42'15" E 372.76'
FND. ½" I.P.
10' BUILDING LINE
S 3°21'46" E 0.37'
DALE-LOW FENCE
THOMAS R. LAIRD SUBDIVISION
LOT 1 (11.7221 ACRE TRACT)
THOMAS R. LAIRD, AND LISA P. LAIRD CALLED 11.8758 ACRE TRACT CLERK'S FILE NO. 2020067280 B.C.O.R.
BARBED WIRE FENCE
POLLARD DRIVE (60'R.O.W.)
N 3°21'46" W 1320.01'
S 3°21'46" E 1320.01'
SCOPEL TRUST CALLED 6 ACRE TRACT CLERK'S FILE NO. 2001-033986 B.C.O.R.
JACKIE SCOPEL, ET AL CALLED 6 ACRE TRACT CLERK'S FILE NO. 1999-020433 B.C.O.R.
JACKIE SCOPEL, ET AL CALLED 6 ACRE TRACT CLERK'S FILE NO. 1999-020433 B.C.O.R.
FRANK E. COLE, ET UX CALLED 8.06 ACRE TRACT VOL. 965, PG 614 B.C.D.R.
PARKER SUBDIVISION OF SECTION 74, H.T.& B.R.R. VOL. 2, PG. 56 B.C.P.R.
20' WIDE PUBLIC ROAD EASEMENT VOL. 954, PG. 203 B.C.D.R.
LOT 1 (11.7221 ACRES)
S 86°37'33" W 372.79'
FND. 1" I.P. N RIGHT TOP N 12°21'52" W 0.11'
FND. 1" I.R.
RICHARD WAYNE DUTY, ET UX CALLED 15.00 ACRE TRACT VOL. 1414, PG 909 B.C.D.R.
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LOT 12
LOT 13
LOT 14
LOT 15
LOT 16
TRACT LINE
LOT LINE
TRACT LINE & LOT LINE
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0 50 100 200
N
DATE: 10/27/2021
DWG: 6336 DEL BELLO SPUR
SHEET: 1 OF 1
FILE: G:\Projects\Manvel\6336 Del Bello Spur\dgn
Last: 10/27/2021 10:15:11 AM
User: Jeff
Plot: 10/27/2021 10:15:11 AM
Plot By: Jeff Wachtstetter
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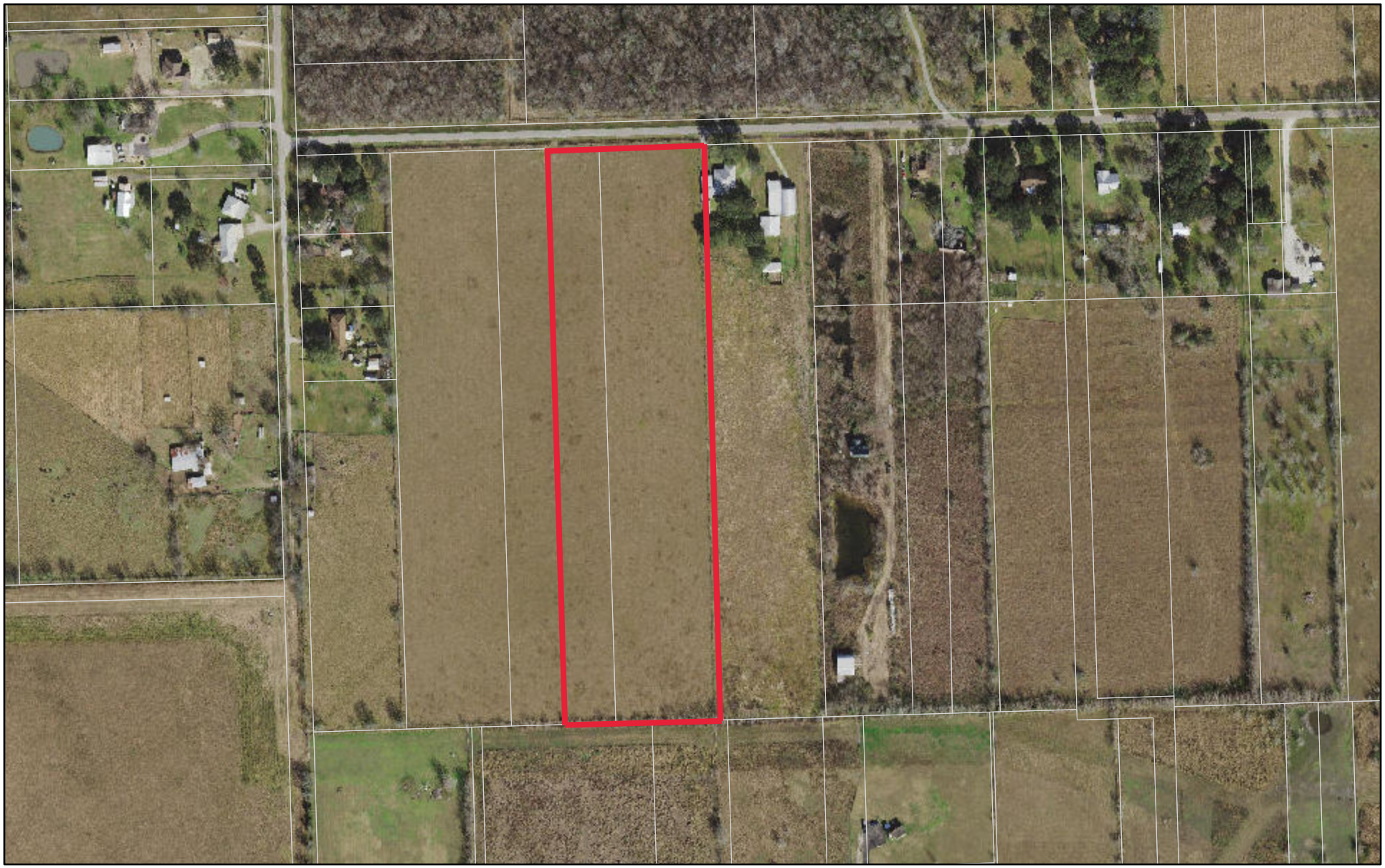
City of Manvel GIS Map



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Manvel2020.sid

Red: Band_1

Green: Band_2

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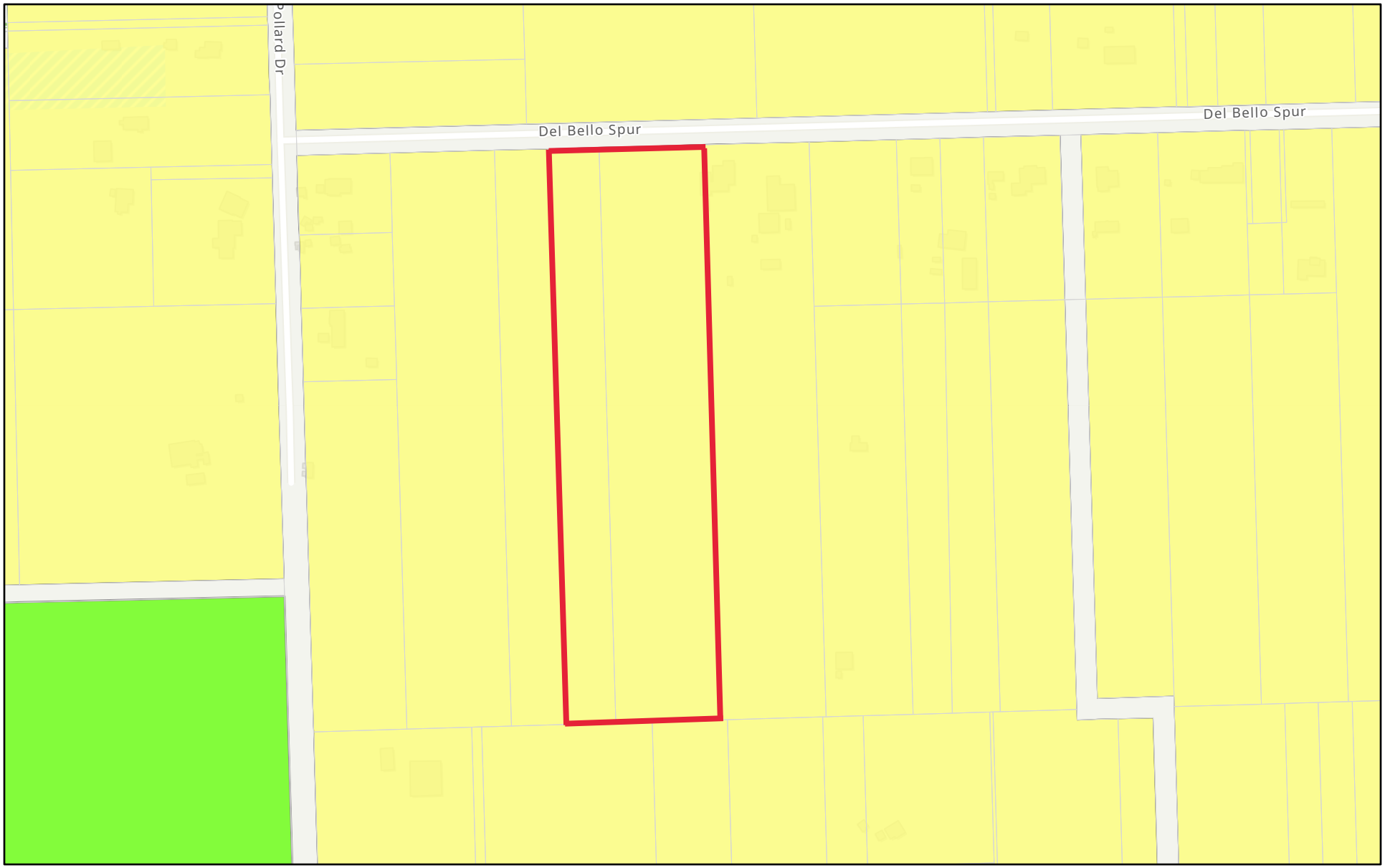
0 0.05 0.1 0.2 km

Esri Community Maps Contributors, Brazoria County, Texas Parks & Wildlife,

City of Manvel

This map is made available for reference purposes only and should not be substituted for a survey product. The City of Manvel will not accept liability of any kind in conjunction with its use.

City of Manvel GIS Map



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Parcels

Zoning - District

SFR - Single Family Residential

O-SFR - Open Single Family Residential

PUD - Planned Unit Development

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City of Manvel

This map is made available for reference purposes only and should not be substituted for a survey product. The City of Manvel will not accept liability of any kind in conjunction with its use.

ORDINANCE NO. 2022-O-06

AN ORDINANCE OF THE CITY OF MANVEL, TEXAS, AMENDING CHAPTER 50. *PLANNING AND DEVELOPMENT,* ARTICLE III. *COMPREHENSIVE PLAN,* BY APPROVING THE 2022 MASTER WATER PLAN UPDATE DOCUMENT AS THE 2022 MASTER WATER PLAN; AMENDING SECTION 50-54. *MASTER WATER PLAN* INTEGRATING THE CITY'S 2022 MASTER WATER PLAN INTO THE CITY'S COMPREHENSIVE PLANS; PROVIDING FOR CONFORMITY OF ALL REGULATIONS TO THE MASTER WATER PLAN; PROVIDING A PENALTY IN AN AMOUNT NOT TO EXCEED $2,000.00 PER DAY FOR EACH DAY OF VIOLATION OF ANY PROVISION HEREOF; AND PROVIDING FOR SEVERABILITY; AND PROVIDING A SEVERANCE CLAUSE AND EFFECTIVE DATE.

WHEREAS, in 2017 the City of Manvel commissioned HDR, Inc. with the task of developing a master water plan for the city; and

WHEREAS, the 2017 Master Water Plan prepared by HDR, Inc. was approved by the City and adopted and integrated into Chapter 50 of The City Code as a plan and policy for the city; and

WHEREAS, in 2020 the city commissioned an updated master water plan to be prepared by HDR, Inc.; and

WHEREAS, the new 2022 Master Water Plan update is now in final form and has been presented to the City for adoption; and

WHEREAS, the City Council hereby adopts the new 2022 Master Water Plan and integrates it into Chapter 50 of The City Code as a plan and policy for the city; **now, therefore,**

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MANVEL, TEXAS:

Section 1. Chapter 50 of the Code of Ordinances of the City of Manvel is hereby amended by adding a new section 50-54. *Master water plan* in Article III to read and provide as follows:

"**CHAPTER 50. PLANNING AND DEVELOPMENT**

. . .

ARTICLE III. COMPREHENSIVE PLAN

. . .

Sec. 50-54. Master water plan.

(a) The city council hereby adopts the [~~2017~~] 2022 Master Water Plan ("Master Water Plan"), a true and correct copy of which shall remain on file in the office of the city secretary. The Master Water Plan shall be the plan and policy for water matters within the city and, to the extent permitted by law, the extra-territorial jurisdiction of the City of Manvel.

(b) All water and related regulations and requirements of The City Code, including, but not limited to, Chapter 62. *Subdivisions,* shall conform to the Master Water Plan. If there is any conflict between an ordinance, rule or regulation of The City Code and the Master Water Plan, the Master Water Plan shall control."

Section 2. Penalty. Any person who shall intentionally, knowingly, recklessly, or with criminal negligence violate any provision of this chapter shall be deemed guilty of a misdemeanor and, upon conviction, shall be fined in an amount not to exceed $2,000.00. Each day of violation shall constitute a separate offense.

Section 3. **Repealer**. All ordinances or parts of ordinances inconsistent or in conflict herewith, are, to the extent of such inconsistency or conflict, hereby repealed.

Section 4. **Severability**. In the event any clause, phrase, provision, sentence, or part of this Ordinance or the application of the same to any person or circumstance shall for any reason be adjudged invalid or held unconstitutional by a court of competent jurisdiction, it shall not affect, impair, or invalidate this Ordinance as a whole or any part or provision hereof other than the part declared to be invalid or unconstitutional; and the City Council of the City of Manvel, Texas, declares that it would have passed each and every part of the same notwithstanding the omission of any such part thus declared to be invalid or unconstitutional, whether there be one or more parts.

PASSED AND APPROVED on first reading this _____ day of _____, 2022.

PASSED, APPROVED, AND ADOPTED on second and final reading this _____, 2022.

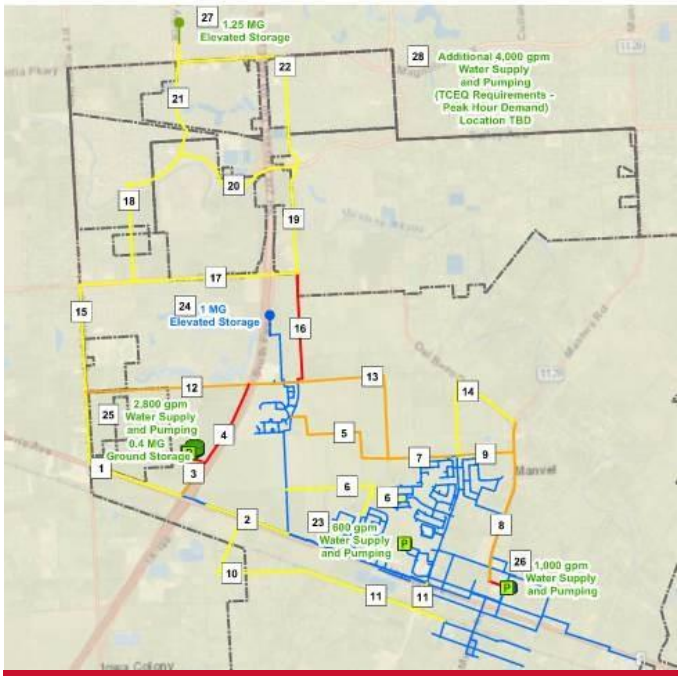
_____
Debra Davison, Mayor

Attest:

_____
Tammy Bell, City Secretary

APPROVED AS TO FORM:

_____
Robert Gervais, City Attorney



City of Manvel

2022 Master Water Plan

City of Manvel, Texas

December 10, 2021

Updated February 3, 2022

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2022 Master Water Plan

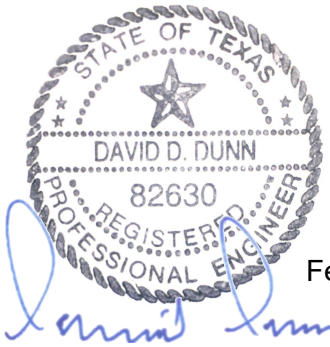
Prepared for:

City of Manvel, Texas

Prepared by:

HDR Engineering, Inc.
TBPE Firm No. F-754

December 10, 2021
Updated February 3, 2022



February 3, 2022

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Acronyms/Abbreviations

acft/yr	acre-feet per year
BRA	Brazos River Authority
CIP	capital improvements plan
City	City of Manvel
ESFU	equivalent single-family unit
gal	gallons
gal/day or gpd	gallons per day
gpm	gallons per minute
HDR	HDR Engineering, Inc.
GCWA	Gulf Coast Water Authority
kgal	thousand gallons
mg	million gallons
mgd	million gallons per day
MUD	municipal utility district
O&M	operations and maintenance
TCEQ	Texas Commission on Environmental Quality
TWDB	Texas Water Development Board
UCM	Uniform Cost Model
yrs	years

1 Introduction

1.1 Background

HDR prepared a master water plan for the City of Manvel in 2017. Since that master plan, the City has experienced substantial growth and anticipates significant additional growth, through the connection of municipal utility districts (MUD) to the City's distribution system and organic growth through new developments.

1.2 Purpose and Goals

This master plan update includes:

- Evaluation of an appropriate equivalent single-family unit (ESFU) daily water demand factor,
- Update to the City's water distribution system hydraulic model,
- Forecast of demands expected through 2050,
- Review of current and future system capacities (supply, storage and booster pumping) with regard to TCEQ requirements,
- Review and update of capital projects recommended in the 2017 master water plan,
- Development of recommended future water supplies, and
- Recommendation of new CIP projects.

This master plan update is intended to serve as a roadmap for the City to use to anticipate improvements needed to the water distribution system, and the projected timing associated with the needs to serve future growth.

2 Existing System Summary

The City's current water distribution system primarily consists of the School Road Water Plant (which consists of two groundwater wells, ground storage tanks, hydropneumatic tanks, and booster pumps). The City has no elevated storage in the existing system but is pursuing design of a 1 million gallon (mg) elevated storage tank near the Del Bello development that is anticipated to be constructed in 2022.

The Manvel Town Center retail development is also under construction and will include new water production and distribution facilities, including new groundwater wells, ground storage tanks and booster pumps.

Manvel High School is currently served by an isolated distribution system, supplied by a dedicated groundwater supply (referred to as the Maverick water plant), which is owned and operated by the Alvin Independent School District. The City intends to acquire these water facilities and incorporate them into the City's overall water system.

3 Water Model Update and Analysis

3.1 Water Distribution System Updates

The City's existing water system hydraulic model was developed in the Innovyze InfoWater modeling platform[1], which was also utilized for this model update. This update included an update of the distribution pipeline network, water plants, and demand allocation based on updated customer billing data.

3.1.1 Network Update

The water distribution pipeline network was updated with current GIS information, which included the addition of the Del Bello and Bluewater developments. The model connectivity was evaluated and updated based on the location and intersection of water pipes included in the City's GIS database.

3.1.2 School Road Water Plant

The School Road Water Plant was updated in the model based on drawings and information provided by the City. The facilities at this plant include:

- Two groundwater wells with a combined capacity of 1,100 gallons per minute (gpm)[2],
- Three ground storage tanks (211,000 gallons, 125,000 gallons and 125,000 gallons), and
- Three 1,000 gpm capacity booster pumps.

3.1.3 Maverick Water Plant

The Maverick Water Plant at Manvel High School was updated in the model based on GIS and information provided by the City. The water distribution facilities at this plant include:

- One 200 gpm groundwater well,
- Two 300 gpm booster pumps, and
- Two 66,000-gallon ground storage tanks.

3.1.4 Proposed Manvel Town Center Water Plant

The Manvel Town Center Water Plant was updated in the model based on drawings and information provided by the City. The facilities proposed for this plant include:

- One 1,200 gpm groundwater well,
- Two 1,000 gpm and one 500 gpm booster pumps, and
- One 244,000-gallon ground storage tank.

[1] https://www.innovyze.com/en-us/products/infowater

[2] Groundwater wells pump into ground storage tanks and are not included in the water system model.

3.2 Model Demand Allocation

3.2.1 Billing Information

The modeled demands were updated with City-provided monthly billing information from November 2016 to December 2019. The water billing data usage amounts were averaged to estimate the system average demand, and the addresses were used to spatially geolocate the accounts in the City's system. Spatial allocation tools within the modeling software were used to apply the average demands to the nearest junction in the modeled network.

3.2.2 Peaking Factors

For the purposes of estimating maximum-day demands, a peaking factor of 2.4 times the average-day demand was used. For estimating peak-hour demands, a peaking factor of 1.85 times the maximum-day demand was used. Once the Del Bello Lakes elevated storage tank is constructed, the required peak-hour demand peaking factor is reduced to 1.25 times the maximum-day demand. Both the maximum-day and peak-hour factors were based on TCEQ guidance in the absence of daily production data.

3.3 Model Analysis

The updated hydraulic model was utilized to analyze the City's water system under maximum-day demand conditions to identify potential deficiencies in the existing system.

Consistent with the hydraulic criteria developed in the 2017 master plan, these criteria were applied to establish the trigger point for when an asset is considered undersized. Distribution pipelines with model-predicted head losses greater than five feet per 1,000 feet of pipe were recommended for upsizing.

4 Equivalent Single-Family Unit (ESFU) Demand and Growth Projections

4.1 ESFU Demand Analysis

Manvel currently uses a value of 360 gallons/day per equivalent single family unit (ESFU) for water planning purposes, and currently serves approximately 2,000 ESFUs. To confirm the reasonableness of this demand factor, HDR identified planning numbers used by other cities and agencies in Texas, including Pearland, Missouri City, Angleton, and Houston, as shown in Table 4-1.

Manvel's planning value of 360 gallons/day per ESFU is consistent with the values utilized by other cities in Texas. For the purposes of this master plan update, this value is primarily used to assign demands within the model.

Table 4-1. ESFU Demand Comparison

City	ESFU Demand (gal/day)
Angleton	330
Houston	340
Pearland	350
Round Rock	450
Austin	500
Missouri City	520
Manvel	**360**

4.2 Municipal Utility District (MUD) ESFU Projections

Much of the growth anticipated in the next 20 years is generated from MUDs that currently have their own groundwater supply and water distribution systems, but anticipate connecting to the City's distribution system once they reach build-out.

The projections of when these MUDs will connect to the City, along with their anticipated ESFU count at the time of connection, are listed in Table 4-2.

Table 4-2. MUD ESFU Summary

MUD	Projected Connection Year	ESFU Count at Connection	ESFU Count in 2030	ESFU Count in 2040
Manvel Town Center (MUD 42)	2023	150	900	1,950
Presidio (MUD 30)	2025	143	858	2,145
Rodeo Palms (MUD 29)	2040	3,000	0	3,000
MUD 47	2040	600	0	600
Southfork (MUD 25)	2040	1,355	0	1,370
2030 & 2040 Total ESFU Count			**1,758**	**9,065**

By 2050, the MUDs listed below are anticipated to connect to the City's system based on the ESFU projections listed below. Because these MUDs will not be connected in 2040, their projected demands were not included in the 2040 analysis.

- Sedona Lakes (MUD 1): 1,313 ESFUs
- Meridiana (MUDs 55, 56 and 57): 3,500 ESFUs
- Pomona (MUD 39): 3,020 ESFUs

4.3 City Growth ESFU Projections

In coordination with City staff and another consultant that is developing the City's wastewater master plan update and impact fee study, 2030 and 2040 projections were developed for growth within the City that is not associated with a MUD-projected connection. This primarily includes growth in the City Center by 2030, plus additional growth in the City West, Central and East by 2040.

The City is projected to serve 12,729 ESFUs in 2030 and 22,785 ESFUs in 2040, in addition to the MUD ESFUs shown in Table 4-2.

4.4 Combined MUD and City ESFU Projections

The projected ESFUs from MUDs connecting to the City's system were added to the projected ESFUs for City growth to obtain the total projected ESFU count to develop future demand scenarios for modeling, and are summarized in Table 4-3.

Table 4-3. Average-Day and Maximum-Day Demands Based on Combined MUD and City ESFUs

Year	MUD ESFUs	City ESFUs	Total ESFUs	Average Day Demand (mgd)[1]	Maximum-Day Demand (mgd)[2]
2030	1,758	12,729	14,487	5.22	12.52
2040[3]	9,065	22,785	31,850	11.47	27.53

1. Calculated based on 360 gal/day per ESFU.
2. Calculated based on Average-Day Demand x 2.4.
3. ESFUs represent total ESFUs in 2040, not incremental ESFUs added between 2030 and 2040.

These average and maximum-day demand projections were loaded into future condition hydraulic model scenarios. The future MUD demands were spatially distributed according to the MUD location. The future City demands were spatially distributed according to the locations of projected developments, as predicted for the wastewater master plan.

5 TCEQ Requirements

Chapter 290 of the Texas Administrative Code includes requirements for the supply and distribution of public water systems as regulated by the Texas Commission on Environmental Quality (TCEQ). These requirements are summarized in Table 5-1.

HDR compared the City's current storage and booster pumping capacity to the TCEQ requirements, as well as what will be required in 2030 and 2040 based on the connection and ESFU projections, as summarized in the following sections. ESFUs are calculated based on 1 ESFU per single family residential connection, and 5 ESFUs per commercial connection. A summary of ESFUs and connections is shown in Table 5-2.

Table 5-1. TCEQ Requirements for Public Water Systems

TCEQ Parameter	TCEQ Requirement
Total Storage (Combined Ground and Elevated Storage)	200 gallons per connection
Elevated Storage	For less than 2,500 connections: 100 gallons per connection, or hydropneumatics storage of 20 gallons per connection
	For more than 2,500 connections: 100 gallons per connection
Booster Pumping Capacity (if elevated storage is less than 200 gallons per connection)	The lesser of: • 2 gallons/minute per connection • Minimum of 1,000 gallons/minute and ability to meet peak-hour demands with the largest pump out of service[1]

1. The peak-hour demand with the largest pump out of service criteria is less than 2 gallons/minute per connection, and is the controlling criteria used for projecting future booster pumping requirements.

Table 5-2. Total Projected ESFUs and Connections

Year	Connections	ESFUs
2020	1,104	1,584
2030	12,683	14,487
2040	28,240	31,850

5.1 Elevated Storage

The City currently has less than 2,500 connections and elevated storage is not required. The City does not currently have any elevated storage, but a 1 million gallon elevated storage tank near the Del Bello Lakes development is currently being designed. Table 5-3 summarizes the projected elevated storage needed to meet TCEQ requirements in 2030 and 2040.

By 2030, accounting for the 1 mg Del Bello tank, it is anticipated that an additional 268,342 gallons of elevated storage would be required to provide 100 gallons of elevated storage per connection. Because growth will continue after 2030, the analysis for subsequent years assumes that 1 mg of storage will be constructed to meet this requirement.

By 2040, in addition to the Del Bello tank and the 1 mg storage to be added by 2030, it is anticipated that an additional 532,200 gallons of elevated storage (total of 2,532,000 gallons) will be required to provide 100 gallons of elevated storage per connection. Similarly, it is assumed that a 1 mg elevated tank will be built to meet this requirement to accommodate additional growth in the years immediately following 2040.

Table 5-3. TCEQ Public Water System Requirements Based on Projected Connections – Elevated Storage

Year	Connections	Required Elevated Storage (gallons)[1]	Current Elevated Storage (gallons)	Elevated Storage Surplus/(Deficit) (gallons)[2]	Recommended New Elevated Storage (gallons)
2020	1,104	0	0	0[3]	0
2030	12,683	1,268,400	1,000,000[4]	(268,400)	1,000,000
2040	28,240	2,824,000	2,000,000[5]	(824,000)	1,000,000

1. 100 gallons per connection.
2. Represents the minimum volume of total storage to add to the system to meet TCEQ requirements based on the total connections projected for that year.
3. Elevated storage is not required for systems with less than 2,500 connections.
4. Represents the elevated tank currently under design near Del Bello Lakes.
5. Represents the Del Bello Lakes tank and the tank projected to be added by 2030.

5.2 Total/Ground Storage

Once the City exceeds 2,500 connections and adds elevated storage to the system at a minimum of 100 gallons/connection, ground storage makes up the remainder of the total storage volume required by TCEQ, at 200 gallons/connection. It is anticipated that ground storage would be added in lieu of more expensive elevated storage to meet the total storage requirements.

The City's ground storage currently consists of 425,000 gallons at the School Road plant and 132,000 gallons at the Maverick Water Plant.

By 2030, the following MUDs will connect to the system and are expected to provide the following ground storage volumes:

- MUD 42 (Manvel Town Center): 644,000 gallons (first phase of 244,000 gallons)[3],
- MUD 30 (Presidio): 429,000 gallons.

With the addition of these MUDs, by 2030, the City's ground storage tank volume is anticipated to be 1,630,000 gallons.

Three additional MUDs are forecasted to connect to the City's system between 2030 and 2040:

- MUD 29 (Rodeo Palms): 600,000[4] gallons (currently 300,000[5] gallons)
- MUD 25 (Southfork): 562,000 gallons[6]
- MUD 47

[3] Source: Construction Plans titled "Manvel Town Center Water Plant", 4/2/2019. Volume of second ground storage tank not shown; assumed to be 400,000 gallons.

[4] Source: TCEQ Drinking Water Watch Summary

[5] Source: TCEQ Drinking Water Watch Summary

[6] Source: TCEQ Drinking Water Watch Summary

In addition, approximately 10,600 new connections from new City developments are forecasted between 2030 and 2040. In addition to the 1,630,000 gallons of ground storage expected to be available in 2030, an additional 500,000 gallons of ground storage is anticipated to be needed by 2040 to serve these new connections. Table 5-4 summarizes the projected surplus in total storage to meet TCEQ requirements in 2030 and 2040.

Table 5-4. TCEQ Public Water System Requirements Based on Projected Connections – Ground Storage

Year	Connections	Required Total Storage (gallons)	Current Ground Storage (gallons)	Available Elevated Storage (gallons)	Total Available Storage (gallons)	Total Storage Surplus/ (Deficit), (gallons)[1]
2020	1,104	220,800[2]	557,000	0	557,000	336,200
2030	12,683	2,536,700	1,630,000[3]	2,000,000[4]	3,630,000	1,093,300
2040	28,240	5,648,000	2,792,000[3]	3,000,000[4]	5,792,000	144,000

1. Represents the volume of ground storage to add to the system to meet TCEQ requirements based on the total connections projected for that year.
2. 200 gallons per connection required with no elevated storage.
3. Includes 1,073,000 gallons of storage anticipated from connection of MUD systems by 2030.
4. Based on the recommended additional elevated storage described in Section 5.1.

5.3 Booster Pumping

Currently, the City has 3,000 gpm of total booster pumping capacity at the School Road water plant and 600 gpm of total booster pumping capacity at the Maverick water plant, which is sufficient to meet the estimated peak-hour demand of 1,759 gpm, based on the estimated average-day demand of 0.57 million gallons per day (mgd), maximum-day demand of 1.37 mgd and a peaking factor of 1.85 over maximum-day.

By 2030, the following MUDs will connect to the system and are expected to provide the following booster pumping capacity:

- MUD 42 (Manvel Town Center): 5,300 gpm (first phase of 2,500 gpm)[7],
- MUD 30 (Presidio): 2,381 gpm[8].

In addition, by 2030, the Maverick plant at Manvel High School is anticipated to be expanded from 600 gpm to 1,200 gpm.

By 2030, it is anticipated that an additional 4,000 gpm of booster pumping capacity, in addition to the booster pumping facilities added to the system through MUD connections, will be required to meet peak-hour demands of 10,866 gpm with the largest pump out of service. Table 5-5 summarizes the projected booster pumping needs to meet TCEQ requirements in 2030 and 2040.

[7] Source: Construction Plans titled “Manvel Town Center Water Plant”, 4/2/2019. Volume of second ground storage tank not shown; assumed to be 400,000 gallons.

[8] Source: TCEQ Drinking Water Watch Summary

Three additional MUDs are forecasted to connect to the City's system between 2030 and 2040:

- MUD 29 (Rodeo Palms): 3,330 gpm (currently 2,400 gpm)
- MUD 25 (Southfork): 4,000 gpm
- MUD 47

In addition, approximately 10,600 new connections from new City developments are forecasted between 2030 and 2040. By 2040, it is anticipated that an additional 10,000 gpm of booster pumping capacity will be required to meet peak-hour demands of 23,888 gpm with the largest pump out of service.

Table 5-5. TCEQ Public Water System Requirements Based on Projected Connections – Booster Pumping

Year	Connections	Required Total Booster Pumping Capacity (gpm)[1,2]	Current Total Booster Pumping Capacity (gpm)[1]	Total Booster Pumping Capacity Surplus/ (Deficit) (gpm)[3]
2020	1,104	1,759	3,600	1,841
2030	12,683	10,866	16,881[4]	(2,387)
2040	28,240	23,888	21,598[4]	(13,755)

1. Represents total booster pumping capacity. Firm capacity is calculated with the largest pump out of service.
2. Equivalent to peak-hour demand.
3. Represents the total booster pumping capacity to add to the system to meet TCEQ requirements based on the total connections projected for that year.
4. Includes 7,681 gpm of MUD booster pumping facilities (MUDs 30 and Manvel Town Center).
5. Includes 15,011 gpm of MUD booster pumping facilities (MUDs 25, 29, 30 and Manvel Town Center).

6 Water Supply Options

Growth within the City limits will occur within the service areas of the various MUDs, but also by development served by the City's water system. The City's current groundwater supplies combined with the supplies from the MUDs when the City takes over operations will be insufficient to meet future water demands and the City will need to develop additional sources of supply. The following section describes future annual water demands projected through 2070 for the City, describes current supplies, and presents projected supply shortages if current supplies are not supplemented with new supplies. Several alternatives were evaluated to address the City's future supply shortages.

Projected demands, supplies, and shortages were evaluated on the basis of both annual volumes and maximum-day requirements. In water supply planning annual demands and supplies are often expressed as volumes of acre-feet per year (acft/yr). An acre-foot is the volume of water required to cover an acre to one foot of depth. Annual volumes are equivalent to average-day demands and supplies when expressed in terms of mgd – one mgd equals 1,120 acft/y. For this report, annual water demands, supplies and shortages are expressed in average-day units of mgd.

Municipalities do not supply water only on an average-day basis and need to have supplies available at rates equivalent to their maximum-day demands, which are roughly twice average-day demands. This analysis includes both annual volumes (average-day demands) and maximum-day demands.

6.1 Water Demands

Future counts of ESFUs and associated average-day water demands are presented for years 2030 and 2040 in Section 4.4. These projections are expanded to include annual projections from 2022 through 2070, as shown in Figure 6-1. Consistent with the demands projected for the water system planning, an average-day water use value of 360 gallons per day (gpd), or 0.25 gpm, was assigned to each ESFU. This is based on TCEQ criteria of 0.6 gpd per connection for required pumping capacity for public water systems. This TCEQ criteria assumes that maximum-day demands are 2.4 times average-day demands (0.6 gpm ÷ 2.4 = 0.25 gpm). This value is conservative compared to the City's current value of roughly 187 gpd per ESFU, but as the City grows and its types of water users diversify, water use per ESFU is expected to increase. For purposes of projecting maximum-day water demands for water supply planning, a smaller factor of 2.0 is used to estimate maximum-day demands to closely approximates maximum-day demands for communities similar to Manvel.

6.2 Current and Future (MUD) Supplies

For water supply planning purposes, Table 6-1 presents the following supplies considered to be available currently to the City.

Table 6-1. Current City Supplies

Water Plant	Well Capacity (gpm)	Average-Day Supply (mgd)	Maximum-Day Supply (mgd)
School Road	1,100	0.79	1.58
Maverick	180	0.13	0.26
Town Center	1,200	0.86	1.73
Total	**2,480**	**1.79**	**3.58**

MUDs are anticipated to increase available supplies as the City acquires them upon each MUD reaching buildout conditions. Table 6-2 presents the MUD supplies and the year anticipated for build-out and City acquisition.

Table 6-2. Supplies Projected from MUDs Expected to Connect the City System

MUD	Projected Connection Year	Estimated Supply at Buildout – Average Day (mgd)	Estimated Supply at Buildout – Maximum-Day (mgd)
Presidio (MUD 30)	2025	0.77	1.54
Rodeo Palms (MUD 29) and MUD 47	2040	1.08	2.16
Southfork (MUD 25)	2040	1.45	2.89
Meridiana (MUD 55, 56, 57)	2050	1.26	2.52
Sedona Lakes (MUD 1)	2050	1.83	3.65
Pomona (MUD 39)	2050	1.09	2.18
Total Supplies from MUDs		**7.47**	**14.94**

The City has also contracted with the Brazos River Authority (BRA) for 3,100 acft/yr of supply from the BRA's Brazos River system of reservoirs. The BRA supply is not currently a potable supply.

6.3 Projected Shortages

Projected City and MUD demands and supplies are shown in Figure 6-1.This demonstrates the increases in supplies available to the City as each MUD is connected to the City over time. The difference between the water demands and total supplies

represents supply shortages for which new supplies need to be developed, as shown in Figure 6-2. Generally, MUD supplies are equal to the projected demands at buildout, but in some cases MUD supplies are projected to exceed the MUDs demands resulting in a decrease in average-day supply shortages when a MUD connects. Shortages are anticipated to begin as early as 2027, increasing to 2.66 mgd (2,977 acft/yr) in 2030, 6.38 mgd (7,149 acft/yr) in 2040, and 8.10 mgd (9,072 acft/yr) in 2049. In 2050, several MUDs are projected to be connected and supplies from those MUDs are anticipated to reduce shortages to 6.94 mgd (7,773 acft/yr) in 2050 through 2070.

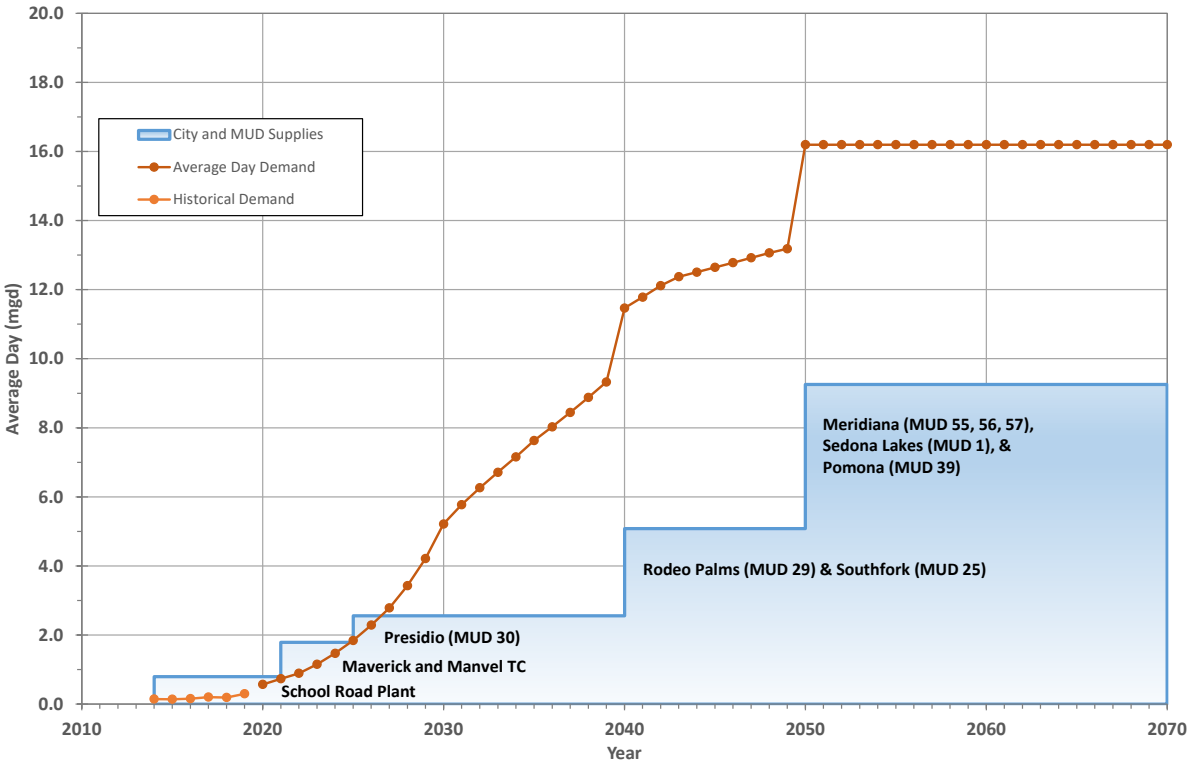

Figure 6-1. Average-Day Demands and Total Supplies for the City of Manvel

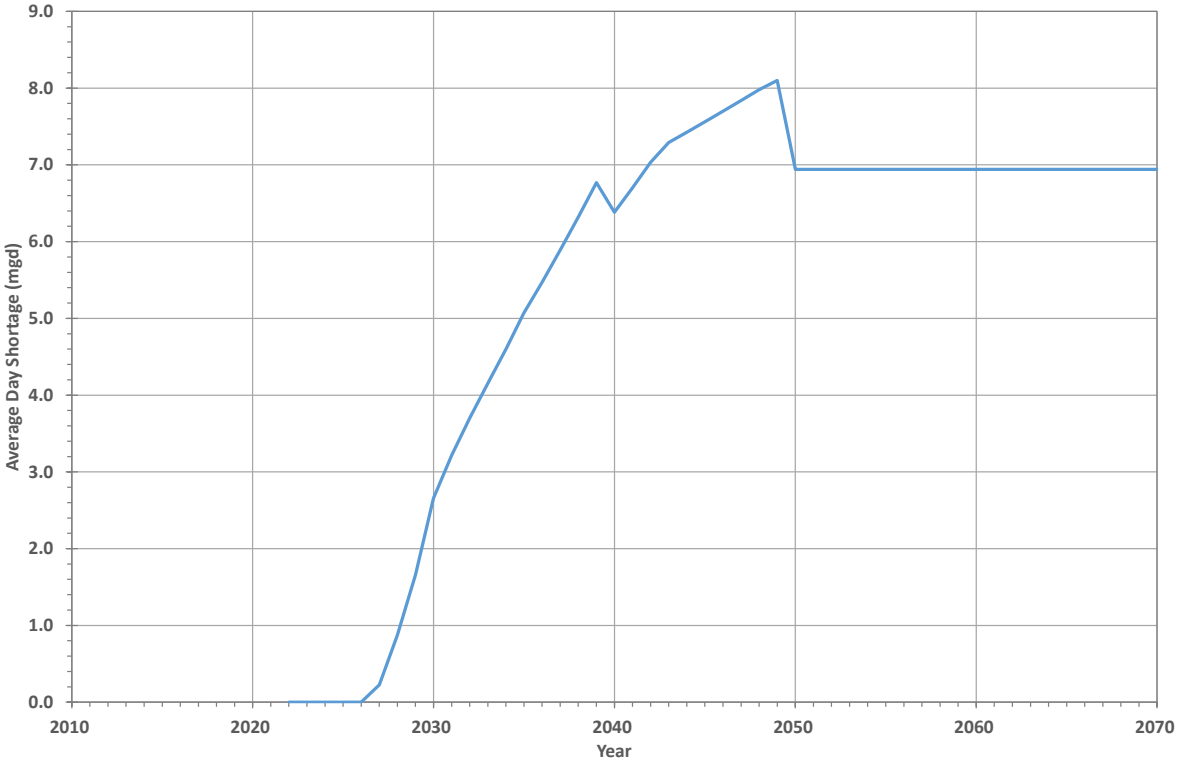

Figure 6-2. Supply Shortages Projected for the City of Manvel

6.4 Future Supply Options

During discussion with City staff, three primary water supply options were identified to consider for future water supplies: Groundwater and two surface water options. Reuse of the City's wastewater was also considered but is not considered economically viable at this time given the relatively small amount of wastewater currently available from a centrally located wastewater plant. However, reuse should be considered in the future as potential wastewater supplies increase.

6.4.1 Groundwater

Groundwater from the Gulf Coast Aquifer System has long been relied upon by municipalities in the area and can be developed relatively inexpensively to provide a long-term reliable water supply. An individual well is anticipated to yield approximately 1,200 gpm, providing 1.73 mgd of maximum-day supply. Assuming a well would be available 95% of the time (5% downtime for maintenance), this would provide roughly 0.82 mgd of average-day supply (920 acft/yr). In order to meet the projected water demands in 2030 (2.66 mgd) and 2040 (6.38 mgd), four new wells would be required by 2030 and eight new wells in 2040. That level of groundwater use concentrated in the Manvel area likely would result in substantial declines in groundwater levels which would reduce well yields and potentially accelerate subsidence. Although no subsidence regulations exist in the area, groundwater use should be increased judiciously to preserve the resource as long as possible.

Based on bids tabulated recently for the Manvel Town Center water plant, a new 1,200 gpm well, 250,000 gal GST, and booster pump would cost approximately $4.1 million. Annual Operation and Maintenance (O&M) costs were estimated using data from the Uniform Cost Model (UCM) developed by the Texas Water Development Board (TWDB) for use in regional and state water planning. Financing is assumed to be 3.5% for 20 years.

Table 6-3. Estimated Costs for a new Groundwater Plant

Average-Day Capacity (mgd)	Cost ($ million)	Debt Service (20 yrs @ 3.5%)	O&M (TWDB UCM)	Total Unit Cost ($/kgal)
0.82	$4.1	$288,500	$133,800	$1.41

6.4.2 Surface Water

Purchase Supply from City of Pearland

The City of Pearland is nearing completion of a new water treatment plant that will be capable of treating 10 mgd of surface water obtained from the canal system operated by the Gulf Coast Water Authority (GCWA). Pearland has indicated a willingness to provide treated surface water supplies to neighboring utilities.

Pearland has indicated that the overall cost of the first phase of the surface water treatment plant project is $137.4 million[9], and is being financed at a discount rate of approximately 2 percent. Expansion of the project could occur in increments of 2 mgd up to an additional 10 mgd of capacity. No costs have been provided for this expansion, so total project costs are estimated to be 60 percent of the initial project costs. Table 6-4 summarizes costs expected for the project. Water would be purchased from Pearland on a “pay as you go” basis, and not a “take or pay.” Therefore, Manvel would only pay for water actually used at the estimated unit costs show in Table 6-4. Transmission and pumping costs from Pearland to Manvel would not be part of the Pearland contract, but would be identified as a separate item in Manvel’s water CIP.

Table 6-4. Estimated Costs for Treated Surface Water Supplies from City of Pearland

Phase	Capacity (mgd)	Cost ($ million)	Debt Service ($ million/yr) (20 yrs @ 2%)	O&M (5% of cap cost) ($ million/yr)	GCWA Raw Water Cost ($/kgal)	Total Unit Cost ($/kgal)
1	10	$137.4	$8.40	$6.87	$0.25	$4.43
2	10	$82.4	$5.80	$4.12	$0.25	$2.97

[9] Pearland has budgeted $175 million for the entire water supply project, which includes the new water treatment plant, transmission lines to deliver the water within the City’s system, and a water meter change-out program. Based on conversations with Pearland during December 2021, the costs associated with the water treatment plant are expected to be $137.4 million. (personal communication, Skipper Jones, City of Pearland, December 2, 2021)

Purchase Supply from Gulf Coast Water Authority (GCWA)

GCWA has indicated a willingness to construct and operate a water treatment plant utilizing surface water supplies delivered through GCWA's canal system. GCWA's supplies are a combination of GCWA-owned water rights in the Brazos and San Jacinto-Brazos Basins and contractual supplies from the BRA. GCWA has indicated that if Manvel were to contract with GCWA for supply that GCWA would incorporate into GCWA supplies Manvel's 3,731 acft/yr (2.77 mgd) of BRA supplies as a "30% backup" and leverage those supplies into a total supply of as much as 12,400 acft/yr (11.1 mgd). GCWA would take over payments to the BRA for the 3,731 acft/yr and Manvel would begin paying GCWA for supplies from the GCWA canal system. Costs from the GCWA canal system are shared among GCWA participants and the method to allocate costs to individual users is complex. For simplicity in evaluating this supply option, it is assumed that raw water costs from GCWA are $0.25 per thousand gallons, or $81.43/acft, consistent with values provided by Pearland for their purchase of raw water from GCWA.

Costs for a potential surface water supply from GCWA would include an intake from the GCWA "B Canal", a water treatment plant, and purchase of raw water. Transmission and pumping costs for the treated water would not be included in the GCWA contract but would be shown as a separate item in Manvel's water CIP. Costs estimated to be paid to GCWA for the treated water supply are summarized in Table 6-5. These costs were developed using the TWDB's UCM. Consistent with known GCWA policies, costs would be paid to GCWA on a "take or pay" basis for the full contractual supply. The supplies shown for Phase 1 and Phase 2 of the GCWA supply are based on the options presented in Section 6.5. Financing is assumed to be 3.5% for 20 years.

Table 6-5. Estimated Costs for Treated Surface Water Supplies from GCWA (7 mgd total average-day capacity)

Phase	Capacity (mgd)	Cost ($ million)	Debt Service ($ million/yr) (20 yrs @ 3.5%)	O&M ($ million/yr)	GCWA Raw Water Cost ($/kgal)	Total Unit Cost ($/kgal)
1	8	$64.2	$4.52	$3.31	Included[1]	$5.36
2	6	$105	$7.39	$5.25	included	$3.09

1. The UCM includes raw water purchase costs in the annual O&M costs.

An alternative "Hybrid Supply" option was evaluated whereby 4 mgd of City of Pearland supplies are utilized first, followed by a supply of 3 mgd from GCWA starting around 2040. Table 6-6 presents costs for 3 mgd of treated water supplies from GCWA under the hybrid option.

Table 6-6. Estimated Costs for Treated Surface Water Supplies from GCWA (3 mgd average-day capacity)

Phase	Capacity (mgd)	Cost ($ million)	Debt Service ($ million/yr) (20 yrs @ 3.5%)	O&M ($ million/yr)	GCWA Raw Water Cost ($/kgal)	Total Unit Cost ($/kgal)
1	6	$48.3	$3.40	$2.57	Included[1]	$5.45

1. The UCM includes raw water purchase costs in the annual O&M costs.

Note that GCWA could develop the water treatment plant as a regional facility to serve other utilities such as Iowa Colony, which would reduce overall costs to project participants. Those options have not been vetted for this study.

6.5 Alternative Plans for Future Supply

There exist many different combinations of future groundwater and surface water options that could be used to meet the future water demands for the City of Manvel. For this water supply plan, three primary optional supply plans were investigated.

Option 1. Balance groundwater and surface water. This option would initially expand groundwater supplies, then incorporate surface water. This option balances groundwater supplies with new surface water supplies, but does not specifically address any future subsidence regulations.

Option 2. Subsidence plan. This option addresses potential subsidence regulations by gradually limiting groundwater use to 40% of total supply.

Option 3. Surface water only. Develop surface water to meet future demands while maximizing use of current groundwater supplies. This option does not address any future subsidence regulations.

Common goals for each option included the following:

- Provide at least 10% annual supply surplus in every year.
- Surface water capacity would be increased at minimum increments of 2 mgd.
- Capacity increases should be sized to last at least 7 years before another capacity increase is required.
- Provide sufficient capacity to meet maximum-day demands. Projects are sized to meet maximum-day demands, but are considered to supply only average-day demands on an annual basis.
- For meeting potential subsidence regulations considered by Option 2, assume that the target groundwater use is phased in by decreasing groundwater use from 100 percent (current) by 6 percent per year starting in 2026, then by 10 percent per year starting in 2030 until a target goal of 40% is reached in 2033. After 2033, a constant target of 40% groundwater use is maintained. Options 1 and 3 do not consider potential limitations on groundwater use from future subsidence regulations.

Option 1 is presented in Table 6-7. This option calls for a new groundwater well to be constructed by each of years 2027, 2028, and 2029 to meet initial supply shortages. This will allow time develop contracts and infrastructure for a new 4 mgd surface water supply, that would be incorporated by 2030. The surface water supply would be expanded to 7 mgd by 2037 to maintain at least a 10 percent supply surplus.

Table 6-7. Option 1 Supply Plan – Balance Groundwater and Surface Water

Year	Average-Day Shortage (mgd)	New Groundwater Supplies (mgd)			Surface Water Supplies (mgd)	Surplus (mgd)	Surplus as % of Demand	% GW Used[1]
		1st Well	2nd Well	3rd Well				
2021	0.00					1.05	143.29%	100%
2022	0.00					0.89	100.12%	100%
2023	0.00					0.63	55.16%	100%
2024	0.00					0.32	21.50%	100%
2025	0.00					0.71	38.74%	100%
2026	0.00					0.27	11.79%	100%
2027	0.23	**0.82**				0.59	21.34%	100%
2028	0.87	0.82	**0.82**			0.77	22.54%	100%
2029	1.66	0.82	0.82	**0.82**		0.81	19.13%	100%
2030	2.66	0.82	0.82	0.82	**4.0**	3.81	72.99%	23%
2031	3.22	0.82	0.82	0.82	4.0	3.25	56.27%	31%
2032	3.70	0.82	0.82	0.82	4.0	2.76	44.08%	36%
2033	4.15	0.82	0.82	0.82	4.0	2.31	34.44%	40%
2034	4.60	0.82	0.82	0.82	4.0	1.86	26.04%	44%
2035	5.07	0.82	0.82	0.82	4.0	1.39	18.27%	48%
2036	5.47	0.82	0.82	0.82	4.0	0.99	12.37%	50%
2037	5.89	0.82	0.82	0.82	**7.0**	3.58	42.37%	17%
2038	6.32	0.82	0.82	0.82	7.0	3.15	35.43%	21%
2039	6.77	0.82	0.82	0.82	7.0	2.70	28.91%	25%
2040	6.38	0.82	0.82	0.82	7.0	3.08	26.87%	39%
2041	6.70	0.82	0.82	0.82	7.0	2.76	23.45%	41%
2042	7.03	0.82	0.82	0.82	7.0	2.43	20.07%	42%
2043	7.29	0.82	0.82	0.82	7.0	2.17	17.57%	43%
2044	7.42	0.82	0.82	0.82	7.0	2.04	16.31%	44%
2045	7.56	0.82	0.82	0.82	7.0	1.90	15.06%	45%
2046	7.70	0.82	0.82	0.82	7.0	1.77	13.82%	45%
2047	7.84	0.82	0.82	0.82	7.0	1.63	12.59%	46%
2048	7.98	0.82	0.82	0.82	7.0	1.48	11.37%	46%
2049	8.10	0.82	0.82	0.82	7.0	1.36	10.35%	47%
2050	6.94	0.82	0.82	0.82	7.0	2.52	15.58%	57%

1. % groundwater used assumes surface water supplies are fully utilized.

Option 2 is presented in Table 6-8. This option assumes no new groundwater supplies will be developed and surface water will be incorporated to meet the percent groundwater supply targets in the assumed subsidence regulations. Under this option, maintaining a surplus supply of 10 percent typically controls the timing of the new supplies, except for the first new surface water supply which would be implemented to begin meeting subsidence targets. The ultimate surface water capacity of 10 mgd would only be needed in 2050 and later to meet the subsidence targets.

Table 6-8. Option 2 Supply Plan – Subsidence Plan

Year	Average-Day Shortage (mgd)	Groundwater Target (% of total supply)	Surface Water Needed to Meet Goal (mgd)	Surface Water Supplies (mgd)	Surplus (mgd)	Surplus as % of Demand	% GW Used[1]
2021	0.00	100%	0.00		1.05	143.29%	100.0%
2022	0.00	100%	0.00		0.89	100.12%	100.0%
2023	0.00	100%	0.00		0.63	55.16%	100.0%
2024	0.00	100%	0.00		0.32	21.50%	100.0%
2025	0.00	100%	0.00		0.71	38.74%	100.0%
2026	0.00	94%	0.14	**5.0**	5.27	230.30%	0.0%
2027	0.23	88%	0.33	5.0	4.77	171.39%	0.0%
2028	0.87	82%	0.62	5.0	4.13	120.48%	0.0%
2029	1.66	76%	1.01	5.0	3.34	79.27%	0.0%
2030	2.66	70%	1.56	5.0	2.34	44.91%	4.1%
2031	3.22	60%	2.31	5.0	1.78	30.90%	13.4%
2032	3.70	50%	3.13	5.0	1.30	20.70%	20.2%
2033	4.15	40%	4.03	**8.0**	3.85	57.32%	0.0%
2034	4.60	40%	4.29	8.0	3.40	47.49%	0.0%
2035	5.07	40%	4.58	8.0	2.93	38.40%	0.0%
2036	5.47	40%	4.82	8.0	2.53	31.50%	0.4%
2037	5.89	40%	5.07	8.0	2.11	25.03%	5.3%
2038	6.32	40%	5.33	8.0	1.68	18.94%	9.9%
2039	6.77	40%	5.60	8.0	1.23	13.21%	14.2%
2040	6.38	40%	6.88	8.0	1.62	14.10%	30.2%
2041	6.70	40%	7.07	8.0	1.30	11.02%	32.1%
2042	7.03	40%	7.27	**10.0**	2.97	24.50%	17.5%
2043	7.29	40%	7.42	10.0	2.71	21.90%	19.2%
2044	7.42	40%	7.50	10.0	2.58	20.59%	20.0%
2045	7.56	40%	7.59	10.0	2.44	19.30%	20.9%
2046	7.70	40%	7.67	10.0	2.30	18.01%	21.8%
2047	7.84	40%	7.75	10.0	2.16	16.73%	22.6%
2048	7.98	40%	7.84	10.0	2.02	15.47%	23.4%
2049	8.10	40%	7.91	10.0	1.90	14.41%	24.1%
2050	6.94	40%	9.72	10.0	3.06	18.89%	38.3%

1. % groundwater used assumes surface water supplies are fully utilized.

Option 3 is presented in Table 6-9. This option is similar to Option 2 except that the surface water supply can be delayed by a year because subsidence regulations are not a consideration, and the ultimate capacity of the surface water supply is 0.5 mgd less than Option 2.

Table 6-9. Option 3 Supply Plan – Surface Water Only

Year	Average-Day Shortage (mgd)	Surface Water Supplies (mgd)	Surplus (mgd)	Surplus as % of Demand	% GW Used[1]
2021	0.00		1.05	143.29%	100.0%
2022	0.00		0.89	100.12%	100.0%
2023	0.00		0.63	55.16%	100.0%
2024	0.00		0.32	21.50%	100.0%
2025	0.00		0.71	38.74%	100.0%
2026	0.00	**5.0**	0.27	11.79%	100.0%
2027	0.23	5.0	4.77	171.39%	0.0%
2028	0.87	5.0	4.13	120.48%	0.0%
2029	1.66	5.0	3.34	79.27%	0.0%
2030	2.66	5.0	2.34	44.91%	4.1%
2031	3.22	5.0	1.78	30.90%	13.4%
2032	3.70	5.0	1.30	20.70%	20.2%
2033	4.15	5.0	0.85	12.62%	25.5%
2034	4.60	**8.0**	3.40	47.49%	30.1%
2035	5.07	8.0	2.93	38.40%	0.0%
2036	5.47	8.0	2.53	31.50%	0.4%
2037	5.89	8.0	2.11	25.03%	5.3%
2038	6.32	8.0	1.68	18.94%	9.9%
2039	6.77	8.0	1.23	13.21%	14.2%
2040	6.38	8.0	1.62	14.10%	30.2%
2041	6.70	8.0	1.30	11.02%	32.1%
2042	7.03	**9.5**	2.43	20.07%	21.9%
2043	7.29	9.5	2.17	17.57%	23.5%
2044	7.42	9.5	2.04	16.31%	24.3%
2045	7.56	9.5	1.90	15.06%	25.1%
2046	7.70	9.5	1.77	13.82%	25.9%
2047	7.84	9.5	1.63	12.59%	26.8%
2048	7.98	9.5	1.48	11.37%	27.5%
2049	8.10	9.5	1.36	10.35%	28.2%
2050	6.94	9.5	2.52	15.58%	41.6%

1. % groundwater used assumes surface water supplies are fully utilized.

Water Supply Option 1 is recommended for the City to pursue. It is the most economical by providing cheaper groundwater supplies and reducing the quantity of more expensive surface water. It also provides for additional time to negotiate agreements and to plan and develop new surface water supplies. Finally, it provides the most flexibility because the timing can be adjusted easily if future demands do not develop as projected. Additionally, if subsidence considerations require the City to reduce the portion of their supply met by groundwater, the surface water supplies can be increased, and the additional groundwater supplies already developed can be kept in reserve to help meet

maximum-day water demands or provide a redundant supply if surface water supplies are temporarily interrupted.

Three alternative capital improvement plans were developed based on Water Supply Option 1 and whether new surface water supplies would be purchased from Pearland, from GCWA, or from both Pearland and GCWA (Hybrid Supply). Those are presented in the next section.

7 Capital Improvements Plan (CIP) and Opinion of Probable Construction Cost

HDR prepared 10- and 20-year water capital improvements plans (CIP) to serve as a roadmap of what storage and water supply/booster pumping expansion projects will be required to meet TCEQ requirements, as well as what piping improvements will be necessary to serve areas of growth and development.

It is recommended the City further prioritize these projects in accordance with other implementation needs so that a holistic infrastructure management plan is established to promote overall infrastructure efficiencies and minimize community disruption whenever possible. This process should be considered as an element of annual CIP planning to promote an adaptive infrastructure plan for the City.

Because the projects necessary to provide water service throughout the City's service territory will change depending on what surface water source is pursued (Pearland, GCWA, or both), base CIPs were developed for 2030 and 2040 consisting of projects that are necessary regardless of future water supply sources. Alternative CIPs were then developed considering the water supply sources that could be pursued by the City. A total of three plans were developed for 2030 and three plans for 2040 based on these alternatives.

Complete alternative CIPs are presented in Exhibits 1 through 6. The CIP maps in the exhibits reflect firm capacity of proposed new pumping capacity, but CIP costs include standby capacity that will be required per TCEQ regulations.

7.1 2030 Capital Improvements Plan

7.1.1 Base 2030 CIP

Base 2030 CIP water projects and their associated opinions of probable construction cost[10] are presented in Exhibits 1 through 3. Because of high demand for materials and the high cost of oil, prices of plastic pipe have dramatically increased since 2020. The costs have been escalated to account for recent market trends and volatility, but have

[10] *Any opinions of probable construction cost provided by HDR are made based on information available to HDR and based on the cost estimator's experience and qualifications and represents its judgment as an experienced and qualified professional engineer. HDR has no control over the cost of labor, materials, equipment, or services furnished by others, or over methods of determining prices, or over competitive bidding or market conditions. HDR does not guarantee that proposals, bids, or actual project or construction cost will not vary from opinions of probable cost prepared by HDR.

not been escalated beyond 2021 dollars. The total costs include a 25% contingency for unknowns and 15% for professional services (engineering and survey). The Base 2030 CIP includes expansion of supplies including the new wells and associated water plant improvements.

7.1.2 Additional 2030 CIP for Water Supply

Pearland Supply

If a surface water supply from the City of Pearland is pursued by Manvel, additional CIP projects necessary to utilize the Pearland supply include a 30-inch water line to transfer the supply from Pearland, a 500,000 gallon GST, and a booster pumping station having a combined capital cost of $17,880,000, shown as project P-1 in Exhibit 1. Annual costs for the additional CIP items and costs to obtain supply from Pearland are summarized in Table 7-1. Costs shown are for Manvel to contract for an average-day supply of 4 mgd and a maximum-day supply of 8 mgd. Supply costs assume Manvel pays for 3.4 mgd (3,800 acft/yr) of supply, which is equivalent to the amount Manvel would need in 2035 assuming that Manvel maximizes its use of groundwater and only utilizes the amount needed to meet the projected shortages with a 10 percent overall supply surplus. Unit costs are based on the unit costs of Pearland supplies of $4.43/1,000 gals (see Table 6-4) plus the annual costs to amortize the capital costs of the CIP over 20 years at 3.5% interest and estimated O&M costs equal to 5% of the capital cost.

Table 7-1. Annual 2030 CIP and Supply Costs for Pearland Supply (3.4 mgd average-day supply)

Cost Item	Unit Cost ($/kgal)	Annual Cost
Treated Water Supply	$4.43	$5,498,000
CIP Project P-1	$1.74	$2,152,000
	Total	**$7,650,000**

GCWA Supply

If a surface water supply from GCWA is pursued, additional CIP projects necessary to utilize treated water from the proposed GCWA water treatment plant include one 30-inch transmission line that splits into two 24-inch lines, which reduce to 20-inch lines north of SH 6, a 500,000 gallon GST, and a booster pumping station with a combined capital cost of $14,880,000, as shown in Exhibit 2. Annual costs to obtain the GCWA supply are summarized in Table 7-2. These costs assume a take or pay contract for 4 mgd of supply (8 mgd maximum-day). Unit costs are based on the unit costs for GCWA supplies $5.36/1,000 gals (see Table 6-5), plus the annual costs to amortize the capital cost of the CIP over 20 years at 3.5% interest and O&M costs estimated by the TWDB's UCM.

Table 7-2. Annual 2030 CIP and Supply Costs for GCWA Supply (4 mgd take or pay contract)

Cost Item	Unit Cost ($/kgal)	Annual Cost
Treated Water Supply	$5.36	$7,827,000
CIP Project G-1	$1.19	$1,743,000
	Total	**$9,570,000**

Hybrid Supply

If the City pursues surface water supplies from both Pearland and GCWA, it is assumed that the Pearland supply would be developed first, to take advantage of the Pearland water treatment plant nearing completion. The Additional 2030 CIP for the Hybrid Supply is identical to the 2030 Pearland supply, costs for which are shown in Table 7-1. The 2030 CIP for the Hybrid Supply is shown in Exhibit 3.

7.2 2040 Capital Improvements Plan

7.2.1 Base 2040 CIP

Base 2040 CIP water projects and their associated opinion of probable construction cost are presented in Exhibits 4 through 6. Because of high demand for materials and the high cost of oil, prices of plastic pipe have dramatically increased since 2020. The costs have been escalated to account for recent market trends and volatility, but have not been escalated beyond 2021 dollars. The total costs include a 25% contingency for unknowns and 15% for professional services (engineering and survey).

7.2.2 Additional 2040 CIP for Water Supply

Note that the projects and costs are shown as “2040” projects, but would appear to be needed by 2037 under the recommended Water Supply Option 1.

Pearland Water Supply

Additional 2040 CIP projects for the Pearland supply include additional 24-inch, 20-inch and 16-inch transmission lines, an additional 500,000 gallon GST, and a booster pumping station, located along the northwest side of the future Manvel system. These projects have a total capital cost of $22,680,000 as shown for projects P-27, P-28, P-30, and P-31 in Exhibit 4. Annual costs are developed similarly as for the additional 2030 CIP and summarized in Table 7-3, assuming that the full 7 mgd average day supply is taken by 2045 (an additional 3.6 mgd).

Table 7-3. Annual 2040 CIP and Supply Costs for Pearland Supply (additional 3.6 mgd average-day supply)

Cost Item	Unit Cost ($/kgal)	Annual Cost
Treated Water Supply	$2.97	$3,903,000
CIP Projects P-27, P-28, P-30, & P-31	$2.08	$2,730,000
	Total	**$6,633,000**

GCWA Water Supply

Additional 2040 CIP projects for the GCWA supply include multiple additional transmission lines to move water from the south to the north portion of the future Manvel system, an additional 500,000 gallon GST, and an expansion of the finished water booster station. These projects (G-2, G-3, G-4, G-23, G-24, G-25, G-27, G-40, and G-43) have a total combined capital cost of $29,180,000 as shown in Exhibit 5. Annual costs are summarized in Table 7-4 assuming that an additional 3 mgd average-day supply is contracted for on a take or pay basis.

Table 7-4. Annual 2040 CIP and Supply Costs for GCWA Supply (additional 3 mgd take or pay contract)

Cost Item	Unit Cost ($/kgal)	Annual Cost
Treated Water Supply	$3.09	$3,387,000
CIP Projects P-27, P-28, P-30, & P-31	$3.21	$3,512,000
	Total	**$6,899,000**

Hybrid Water Supply

Additional 2040 CIP projects for the Hybrid Supply option include additional pipeline projects to convey the additional supply throughout the Manvel system, a 500,000 gallon GST, and a booster pump station, as shown in Exhibit 6. These projects (H-2, H-23, H-27, H-40, H-42, and H-43) have a total capital cost of $32,310,000. Costs for GCWA supplies under the Hybrid Supply option are as shown in Table 6-6. Total annual costs are shown in Table 7-5.

Table 7-5. Annual 2040 CIP and Supply Costs for Hybrid Supply (additional 3 mgd take or pay contract with GCWA)

Cost Item	Unit Cost ($/kgal)	Annual Cost
Treated Water Supply	$5.45	$5,969,000
CIP Projects H-2, H-23, H-27, H-40, H-42 & H-43	$3.55	$3,889,000
	Total	**$9,858,000**

7.3 Recommendations

7.3.1 Adaptive Infrastructure Planning

The City's rapid growth is causing a highly dynamic development environment in which it is difficult to prioritize the large number of capital projects and efficiently utilize the City's capital resources. It is recommended the City further prioritize these projects in accordance with other implementation needs so that a holistic infrastructure management plan is established to promote efficient utilization of capital and minimize community disruption. Based on the rapidly changing development environment, the City should revisit this Master Water Plan at least annually so that the City can adaptively manage its capital investments.

7.3.2 Future Water Supply

It is recommended that the City pursue Water Supply Option 1, in which three additional groundwater wells would be constructed prior to 2030, followed by the incorporation of surface water supplies into the City's water supply portfolio about 2030. This approach will provide the City with flexibility in meeting future demands by allowing these first additional supplies to be delayed or expedited if water demands develop differently than projected.

Based on conversations with City staff the City should obtain surface water utilizing the Hybrid approach, whereby the City would obtain an initial surface water supply from the City of Pearland by 2030. The next increment of supply would be contracted from the GCWA sometime around 2040, depending on future growth. This Hybrid approach initially would take advantage of the relatively less expensive water from Pearland and take advantage of the shorter timeframe needed to obtain the supply. Then, as demands grow and the City has a better understanding of expected water demands, a new water treatment plant on the south side of the system would be developed with GCWA, which would also allow the City to utilize its water contracted from the BRA. This new plant would have the option of serving as a regional supply which would decrease the City's unit costs from those shown here, which assume only the City would be supplied from the new plant. This Hybrid approach also provides the City flexibility if additional supplies from Pearland or another water supplier are more advantageous in the future.

Exhibit 1. Base 2030 Capital Improvements Plan with Additional Pearland Water Supply CIP

LEGEND

- Pearland Supply
- Pearland Supply
- 2030 Pearland CIP Pipelines
- 2030 CIP Plants
- Existing Plants

2030 CIP Tanks

- EST
- GST

Existing Tanks

- EST
- GST

2030 CIP Water Lines

- 8"
- 12"
- 16"
- 20"
- Existing Water Lines
- City Limits

0 Miles 1.5

2030 Proposed CIP and Pearland Supply Projects and Escalated OPCC		
CIP No.	Total*	Description
1	$ 2,010,000	12" Hwy 6 Water Line
2	$ 1,490,000	16" Parallel Manvel Town Center Discharge Line
3	$ 3,490,000	20" Manvel Town Center North Discharge Line
4	$ 630,600	Cemetery Road Waterline Loop - Phase 2
5	$ 3,640,000	16" Manvel City Center Interconnect
6	$ 3,620,000	12" Sowell Interconnect
7	$ 1,450,000	12" Dogwood Avenue - Phase 1
8	$ 4,850,000	20" and 16" Masters Road Water Line
9	$ 1,330,000	12" Dogwood Avenue - Phase 2
10	$ 3,990,000	12" Bissell Road Loop - Phase 1
11	$ 2,570,000	12" Bissell Road Loop - Phase 2
12	$ 1,510,000	20" Del Bello Boulevard Water Line Upsize
13	$ 4,510,000	16" Del Bello Interconnect
14	$ 5,240,000	16" and 12" Del Bello and Masters Road Loop
15	$ 1,170,000	Maverick Plant Improvements and 600 gpm pump station expansion
16	$ 5,590,000	Del Bello 1 MG EST (2022)
17	$ 7,510,000	Manvel Town Center Expansion (Wells, 0.4 MG GST & 2,800 gpm Pump Station)
18	$ 3,800,000	School Road Plant Improvements and 1,000 gpm pump station expansion
19	$ 7,120,000	1 MG EST (2029)
P-1	$ 17,880,000	30" Pearland Supply Transmission Line (including 0.5MG GST and Booster PS)
	$ 83,400,600	

*Cost includes 25% contingency and 15% for professional services, except for Del Bello EST (15% cont).
All costs are shown in 2021 dollars and not inflated for future years costs.
Costs have been escalated in light of recent material shortages and cost volatility, except
Del Bello EST (already assumed escalated).
Opinions of Probable Construction Cost are estimated for planning purposes.
HDR cannot guarantee that proposals, bids, or actual construction costs will not vary.

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community,

CITY OF MANVEL

2022 MASTER WATER PLAN

2030 CIP PROJECTS AND PEARLAND SUPPLY

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Exhibit 2. Base 2030 Capital Improvements Plan with Additional GCWA Water Supply CIP

LEGEND

- GCWA Supply
- GCWA Supply
- 2030 GCWA CIP Pipelines
- 2030 CIP Plants
- Existing Plants

2030 CIP Tanks

- EST
- GST

Existing Tanks

- EST
- GST

2030 CIP Water Lines

- 8"
- 12"
- 16"
- 20"
- Existing Water Lines
- City Limits

0 Miles 1.5

2030 Proposed CIP and GCWA Supply Projects and Escalated OPCC			
CIP No.	Total*		Description
1	$	2,010,000	12" Hwy 6 Water Line
2	$	1,490,000	16" Parallel Manvel Town Center Discharge Line
3	$	3,490,000	20" Manvel Town Center North Discharge Line
4	$	630,600	Cemetery Road Waterline Loop - Phase 2
5	$	3,640,000	16" Manvel City Center Interconnect
6	$	3,620,000	12" Sowell Interconnect
7	$	1,450,000	12" Dogwood Avenue - Phase 1
8	$	4,850,000	20" and 16" Masters Road Water Line
9	$	1,330,000	12" Dogwood Avenue - Phase 2
10	$	3,990,000	12" Bissell Road Loop - Phase 1
11	$	1,910,000	12" Bissell Road Loop - Phase 2
12	$	1,510,000	20" Del Bello Boulevard Water Line Upsize
13	$	4,510,000	16" Del Bello Interconnect
14	$	5,240,000	16" and 12" Del Bello and Masters Road Loop
15	$	1,170,000	Maverick Plant Improvements and 600 gpm pump station expansion
16	$	5,590,000	Del Bello 1 MG EST (2022)
17	$	7,510,000	Manvel Town Center Expansion (Wells, 0.4 MG GST & 2,800 gpm Pump Station)
18	$	3,800,000	School Road Plant Improvements and 1,000 gpm pump station expansion
19	$	7,120,000	1 MG EST (2029)
G-1	$	14,480,000	GCWA Supply Transmission Lines (including 0.5MG GST and Booster PS)
	$	79,340,600	

*Cost includes 25% contingency and 15% for professional services, except for Del Bello EST (15% cont).
All costs are shown in 2021 dollars and not inflated for future years costs.
Costs have been escalated in light of recent material shortages and cost volatility, except
Del Bello EST (already assumed escalated).
Opinions of Probable Construction Cost are estimated for planning purposes.
HDR cannot guarantee that proposals, bids, or actual construction costs will not vary.

16 1 MG Elevated Storage
17 2,800 gpm Water Supply and Pumping
0.4 MG Ground Storage
19 1 MG Elevated Storage
15 600 gpm Water Supply and Pumping
18 1,000 gpm Water Supply and Pumping
20-IN
24-IN
24-IN
30-IN
G-1

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community,

CITY OF MANVEL
2022 MASTER WATER PLAN
2030 CIP PROJECTS AND GCWA SUPPLY

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Exhibit 3. Base 2030 Capital Improvements Plan with Additional Hybrid Water Supply CIP

LEGEND

- Pearland Supply
- Pearland Supply
- 2030 Hybird CIP Pipelines
- 2030 CIP Plants
- Existing Plants

2030 CIP Tanks

- EST
- GST

Existing Tanks

- EST
- GST

2030 CIP Water Lines

- 8"
- 12"
- 16"
- 20"
- Existing Water Lines
- City Limits

0 Miles 1.5

PEARLAND WTP

H-1

30-IN

H-1

30-IN

16 1 MG Elevated Storage

17 2,800 gpm Water Supply and Pumping

0.4 MG Ground Storage

3

2

1

10

12

13

14

14

5

7

9

19

1 MG Elevated Storage

6

6

8

15 600 gpm Water Supply and Pumping

18 1,000 gpm Water Supply and Pumping

11

11

4

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community,

2030 Proposed CIP and Hybrid Supply Projects and Escalated OPCC

CIP No.	Total*	Description
1	$ 2,010,000	12" Hwy 6 Water Line
2	$ 1,490,000	16" Parallel Manvel Town Center Discharge Line
3	$ 3,490,000	20" Manvel Town Center North Discharge Line
4	$ 630,600	Cemetery Road Waterline Loop - Phase 2
5	$ 3,640,000	16" Manvel City Center Interconnect
6	$ 3,620,000	12" Sowell Interconnect
7	$ 1,450,000	12" Dogwood Avenue - Phase 1
8	$ 4,850,000	20" and 16" Masters Road Water Line
9	$ 1,330,000	12" Dogwood Avenue - Phase 2
10	$ 3,990,000	12" Bissell Road Loop - Phase 1
11	$ 2,570,000	12" Bissell Road Loop - Phase 2
12	$ 1,510,000	20" Del Bello Boulevard Water Line Upsize
13	$ 4,510,000	16" Del Bello Interconnect
14	$ 5,240,000	16" and 12" Del Bello and Masters Road Loop
15	$ 1,170,000	Maverick Plant Improvements and 600 gpm pump station expansion
16	$ 5,590,000	Del Bello 1 MG EST (2022)
17	$ 7,510,000	Manvel Town Center Expansion (Wells, 0.4 MG GST & 2,800 gpm Pump Station)
18	$ 3,800,000	School Road Plant Improvements and 1,000 gpm pump station expansion
19	$ 7,120,000	1 MG EST (2029)
H-1	$ 17,880,000	30" Pearland Supply Transmission Line (including 0.5MG GST and Booster PS)
	$ 83,400,600	

*Cost includes 25% contingency and 15% for professional services, except for Del Bello EST (15% cont).
All costs are shown in 2021 dollars and not inflated for future years costs.
Costs have been escalated in light of recent material shortages and cost volatility, except
Del Bello EST (already assumed escalated).
Opinions of Probable Construction Cost are estimated for planning purposes.
HDR cannot guarantee that proposals, bids, or actual construction costs will not vary.

Exhibit 4. Base 2040 Capital Improvements Plan with Additional Pearland Water Supply CIP

LEGEND

- Pearland Supply
- Pearland Supply
- 2030 and 2040 Pearland CIP Pipelines
- Existing and 2030 CIP Plants

2040 CIP Tanks

- EST
- GST

Existing and 2030 CIP Tanks

- EST
- GST

2040 CIP Water Lines

- 12"
- 16"
- 20"
- 30"
- Existing and 2030 CIP Water Lines
- City Limits

0 Miles 1.5

2040 Proposed CIP and Pearland Supply Projects and Escalated OPCC			
CIP No.	Total*		Description
21	$	3,910,000	12" Hwy 6 and CR48 Water Line
22	$	4,330,000	16" Rodeo Palms Parkway
23	$	3,300,000	20" Old Airline Road Water Line
26	$	1,030,000	16" Manvel Parkway Water Line Upsize
P-27	$	4,330,000	16" Pomona Parkway Water Line
P-28	$	2,890,000	16" SH 288 Water Line
29	$	3,230,000	12" County Road 101 Water Line
P-30	$	9,590,000	24" Pearland Supply and 20" Kirby Drive Water Line
P-31	$	5,870,000	16" Northwest Interconnect
32	$	3,260,000	12" Jordan Road Loop - Phase 1
33	$	1,950,000	12" Jordan Road Loop - Phase 2
34	$	3,350,000	12" Bissell Road Loop
35	$	3,230,000	12" Southeast Loop
36	$	4,180,000	12" Cemetery Road Water Line
37	$	3,340,000	12" Markham Road Water Line
38	$	2,490,000	12" Belcher Road Water Line - Phase 1
39	$	4,200,000	12" Belcher Road Water Line - Phase 2
40	$	6,210,000	20" Croix Road Line and 16" CR90 Line
41	$	2,320,000	16" Masters Road Water Line
42	$	3,860,000	12" Patterson Rd Line and 16" Chocolate Bayou Rd Line
43	$	3,590,000	20" Northern System Interconnect
44	$	5,280,000	12" Oil Field Road Water Line
45	$	7,120,000	EST (1 MG)
	$	92,860,000	

*Cost includes 25% contingency and 15% for professional services.
All costs are shown in 2021 dollars and not inflated for future years costs.
Costs have been escalated in light of recent material shortages and cost volatility.
Opinions of Probable Construction Cost are estimated for planning purposes.
HDR cannot guarantee that proposals, bids, or actual construction costs will not vary.

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community,

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2022 MASTER WATER PLAN
2040 CIP PROJECTS AND PEARLAND SUPPLY

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Exhibit 5. Base 2040 Capital Improvements Plan with Additional GCWA Water Supply CIP

LEGEND

- GCWA Supply
- GCWA Suuply
- 2030 and 2040 GCWA CIP Pipelines
- Existing and 2030 CIP Plants

2040 CIP Tanks

- EST
- GST

Existing and 2030 CIP Tanks

- EST
- GST

2040 CIP Water Lines

- 12"
- 16"
- 20"
- 30"
- Existing and 2030 CIP Water Lines
- City Limits

0 Miles 1.5

2040 Proposed CIP and GCWA Supply Projects and Escalated OPCC			
CIP No.		Total*	Description
21	$	3,910,000	12" Hwy 6 and CR48 Water Line
22	$	4,330,000	16" Rodeo Palms Parkway
G-23	$	2,490,000	12" Old Airline Road Water Line
G-24	$	2,940,000	12" Iowa Lane Water Line
G-25	$	5,050,000	12" Croix Road Water Line
26	$	1,030,000	16" Manvel Parkway Water Line Upsize
G-27	$	3,770,000	12" Pomona Parkway Water Line
28	$	2,520,000	12" SH 288 Water Line
29	$	3,230,000	12" County Road 101 Water Line
30	$	2,200,000	12" Kirby Drive Water Line
31	$	5,120,000	12" Northwest Interconnect
32	$	3,260,000	12" Jordan Road Loop - Phase 1
33	$	1,950,000	12" Jordan Road Loop - Phase 2
34	$	3,350,000	12" Bissell Road Loop
35	$	3,230,000	12" Southeast Loop
36	$	4,180,000	12" Cemetery Road Water Line
37	$	3,340,000	12" Markham Road Water Line
38	$	2,490,000	12" Belcher Road Water Line - Phase 1
39	$	4,200,000	12" Belcher Road Water Line - Phase 2
G-40	$	5,350,000	12" Croix Road Line and 16" CR90 Line
41	$	2,320,000	16" Masters Road Water Line
42	$	3,860,000	12" Patterson Rd Line and 16" Chocolate Bayou Rd Line
G-43	$	2,710,000	12" Northern System Interconnect
44	$	5,280,000	12" Oil Field Road Water Line
45	$	7,120,000	EST (1 MG)
G-2	$	2,370,000	Additional GCWA Supply (including GST and booster PS)
G-3	$	2,100,000	20" Masters Road Water Line
G-4	$	2,400,000	20" Iowa Lane Water Line Upsize
	$	96,100,000	

*Cost includes 25% contingency and 15% for professional services.
All costs are shown in 2021 dollars and not inflated for future years costs.
Costs have been escalated in light of recent material shortages and cost volatility.
Opinions of Probable Construction Cost are estimated for planning purposes.
HDR cannot guarantee that proposals, bids, or actual construction costs will not vary.

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community,

CITY OF MANVEL
2022 MASTER WATER PLAN
2040 CIP PROJECTS AND GCWA SUPPLY

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Exhibit 6. Base 2040 Capital Improvements Plan with Additional Hybrid Water Supply CIP

LEGEND

- GCWA Supply
- GCWA Suuply
- Pearland Supply
- Pearland Supply
- 2030 Hybrid CIP Pipelines
- 2040 Hybrid CIP Pipelines
- Existing and 2030 CIP Plants

2040 CIP Tanks

- EST
- GST

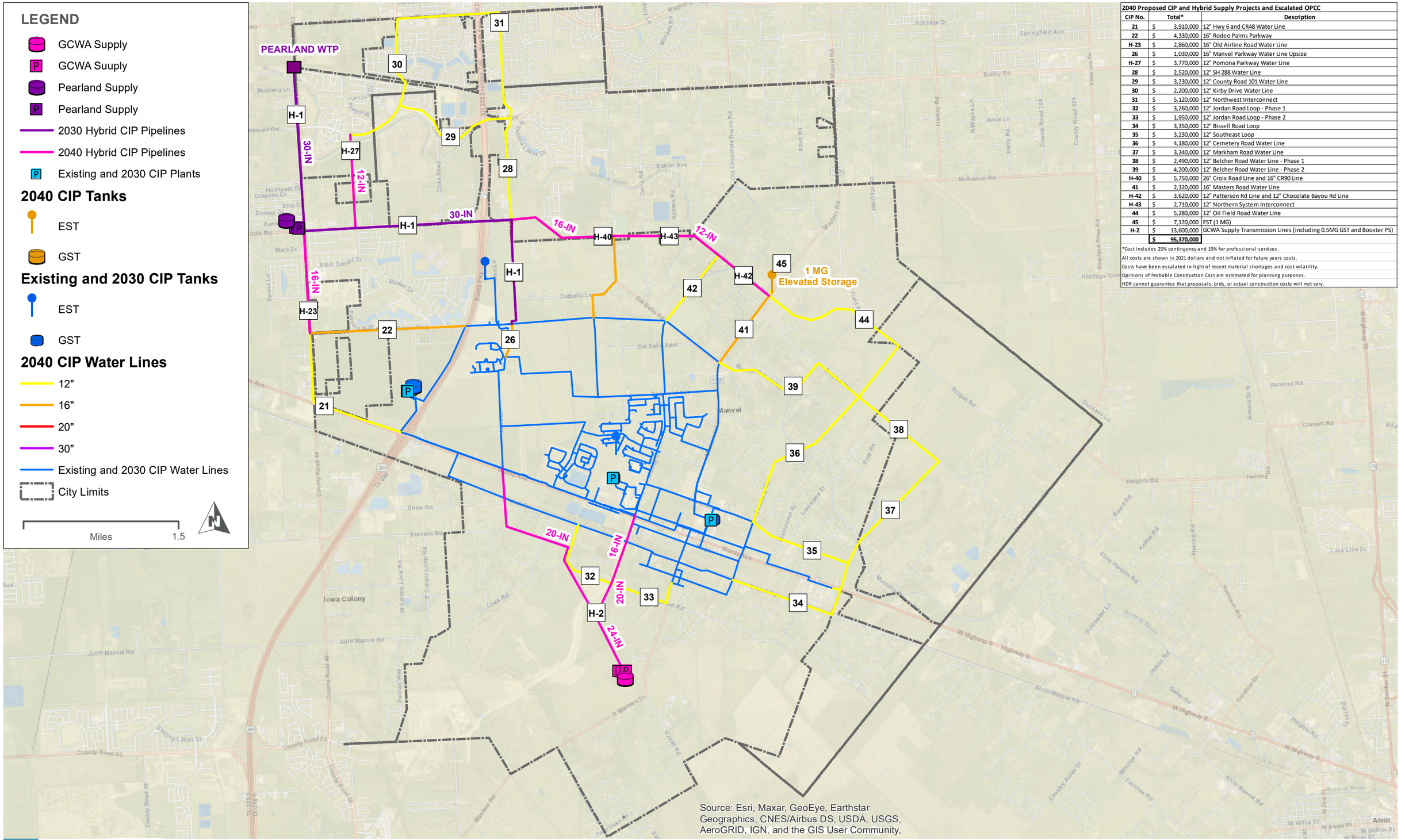
Existing and 2030 CIP Tanks

- EST
- GST

2040 CIP Water Lines

- 12"
- 16"
- 20"
- 30"
- Existing and 2030 CIP Water Lines
- City Limits

Miles 1.5



2040 Proposed CIP and Hybrid Supply Projects and Escalated OPCC

CIP No.	Total*	Description
21	$ 3,910,000	12" Hwy 6 and CR48 Water Line
22	$ 4,330,000	16" Rodeo Palms Parkway
H-23	$ 2,860,000	16" Old Airline Road Water Line
26	$ 1,030,000	16" Manvel Parkway Water Line Upsize
H-27	$ 3,770,000	12" Pomona Parkway Water Line
28	$ 2,520,000	12" SH 288 Water Line
29	$ 3,230,000	12" County Road 101 Water Line
30	$ 2,200,000	12" Kirby Drive Water Line
31	$ 5,120,000	12" Northwest Interconnect
32	$ 3,260,000	12" Jordan Road Loop - Phase 1
33	$ 1,950,000	12" Jordan Road Loop - Phase 2
34	$ 3,350,000	12" Bissell Road Loop
35	$ 3,230,000	12" Southeast Loop
36	$ 4,180,000	12" Cemetery Road Water Line
37	$ 3,340,000	12" Markham Road Water Line
38	$ 2,490,000	12" Belcher Road Water Line - Phase 1
39	$ 4,200,000	12" Belcher Road Water Line - Phase 2
H-40	$ 5,750,000	26" Croix Road Line and 16" CR90 Line
41	$ 2,320,000	16" Masters Road Water Line
H-42	$ 3,620,000	12" Patterson Rd Line and 12" Chocolate Bayou Rd Line
H-43	$ 2,710,000	12" Northern System Interconnect
44	$ 5,280,000	12" Oil Field Road Water Line
45	$ 7,120,000	EST (1 MG)
H-2	$ 13,600,000	GCWA Supply Transmission Lines (including 0.5MG GST and Booster PS)
	$ 95,370,000	

*Cost includes 25% contingency and 15% for professional services.
All costs are shown in 2021 dollars and not inflated for future years costs.
Costs have been escalated in light of recent material shortages and cost volatility.
Opinions of Probable Construction Cost are estimated for planning purposes.
HDR cannot guarantee that proposals, bids, or actual construction costs will not vary.

PATH: C:\USERS\SMABROUK\DOCUMENTS\MANVEL\SHAPEFILES\MASTERPLANUPDATE\WATER_SUPPLY\MANVEL WATER SYSTEM - 2040 PROJECT MAP.MXD - USER: SMABROUK - DATE: 10/27/2021

Board & Commission Application

INSTRUCTIONS: Please complete the entire form and sign at the bottom of the second page. **A copy of your Driver's License or other state issued ID will need to be attached to the application in order for it to be processed**. Please return your completed application to the City Secretary's Office at 20025 HWY 6, Manvel Tx 77578. Please note, knowingly making a false entry in, or false alteration of, a governmental record is an offense under section 37.10 of the Texas Penal Code and, upon conviction, may subject a violator to criminal penalties.

QUALIFICATIONS: In addition to the qualifications for service on a board required by city ordinances or state law, a person appointed to a board must not be delinquent in the payment of taxes, water service charge or other obligation to the city.

Name: Angela Graham

Please indicate your preference below.

_____ Croix Park Task Force (Meeting Dates TBA) _____ Events Task Force (Meeting Dates TBA)

____Planning & Zoning Board (meets 1st, and 3rd, Monday @ 7:00 p m. monthly)

X Manvel Economic Development Corporation Board (meets 2nd Wednesday of the month @ 7:00 p m.)

____Zoning Board of Adjustments (meets as needed)

____TIRZ 3 Board _____ SMDA Board (meets as needed) _____Building & Standards Commission (meets as needed)

_____Parks and Recreation Board (meets 1st Wednesday of the month @ 6:30 p m ._____Rental Appeal Board (meets as needed)

☒ ***Yes, I would be interested in serving on subcommittees that may be formed.***

Personal Information

Home Address: 6702 Canyon Trail, Manvel 77578

Telephone: __Fax:_____

E-mail: grahamgang4@sbcglobal.net

I have been a Manvel Resident for 7.5 years

Registered voter? ☑ Yes ☐ No

Occupational Information

Business Owner? ☐ Yes ☑ No

Business Name: Joe Cook & Associates, Inc

Occupation: Insurance Agent

Business Address: 4440 W. Main, Suite B, League City

Telephone: __ Fax:

Are you a Citizen of the United States? ☑ **Yes** ☐ **No**

Do you have a current Driver's License? ☑ **Yes** ☐ **No**
List Driver's License Number_____Exp Date _____DOB_____

Have you ever been convicted of a felony? ☐ **Yes** ☑ **No**
If yes, explain_____

Have you been convicted of, received probation or deferred adjudication for any offense that was not a felony with in the last 10 years? ☐ **Yes** ☑ **No**
If yes, explain_____

Are you, or have you ever been an adversary party to pending litigation against the City of Manvel? ☐ **Yes** ☑ **No**
If yes, explain_____

Have you ever or do you currently serve on any city boards? ☑ **Yes** ☐ **No**
If so, what board/city and dates? Manvel EDC

How many city board meetings have you attended in the last 3 months? 0
What board meetings did you attend? _____

Are you involved in any community activities? (Civic or Hobbies) ☑ Yes ☐ No

Business Referral Partners of Pearland -- 10 Year Member in May 2022. Held various Leadership positions.

Are you related to any City Employee or Council Member? ☐ Yes ☑ No

If so, please state who:

Do you have any outstanding taxes or other debt owed to the city? ☐ Yes ☑ No

Have you been cited in the past year for non-compliance of any City Codes/Ordinances ☐ Yes ☑ No

If yes, explain

Please indicate briefly why you would like to be appointed to a Board or Commission:

I'd l ke to continue to serve to contribute to the city I've made my home.

PROVIDE ALL INFORMATION REQUESTED: INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED FOR BOARD/COMMISSION OPPORTUNITIES. *Your complete application form will be maintained in our active files for one year from the date of the application. I understand that should I not be appointed to a City of Manvel board or commission, this application and any other records obtained, collected or otherwise prepared regarding this application shall be maintained in accordance with the Texas Public Information Act and the City of Manvel's document retention schedule.*

DISCLAIMER AND SIGNATURE

I certify that my answers above are true and complete. I understand that the information contained in this application may be considered among other criteria, qualifications and/or information, by the City Council in its evaluation for the position being sought. I further understand that should I be appointed to any City of Manvel board or commission, I serve at the pleasure of the City Council and may be removed from said position at any time and for any reason or no reason at all, with our without notice. I also understand that should I be appointed to a City of Manvel board or commission, I must be responsible for a creditable record of attendance and performance. If this application leads to my appointment to a position on a City of Manvel Board or Commission, I understand that false or misleading information in my application may result in my removal from my position.

I authorize the City of Manvel to conduct a background check to verify all data given in this application.

I have carefully read and understand the above statement.

Angela Graham 1/30/2022

Signature ***Date***

FOR OFFICE USE ONLY

Date Application Received _____ New Applicant? ☐Yes ☐No

If no, applicant previously served on_____Board_____.

Via: ☐website ☐mail ☐in person ☐referral ☐newspaper Appointment made to_____Term Expires_____

☐Statement & Oath Completed ☐No appointment made at this time, retain application for one year.

Print

Boards & Commissions Volunteer Application - Submission #328

Date Submitted: 1/19/2022

City of Manvel Board & Commission Application

INSTRUCTIONS: Please complete the entire form and sign at the bottom of the second page. A copy of your Driver's License or other state issued ID will need to be attached to the application in order for it to be processed. Please return your completed application to the City Secretary's Office at 20025 HWY 6, Manvel Tx 77578. Please note, knowingly making a false entry in, or false alteration of, a governmental record is an offense under section 37.10 of the Texas Penal Code and, upon conviction, may subject a violator to criminal penalties.

QUALIFICATIONS: In addition to the qualifications for service on a board required by city ordinances or state law, a person appointed to a board must not be delinquent in the payment of taxes, water service charge or other obligation to the city.

Name*

Lorraine Hehn

Please indicate your preference below*

- [ ] Croix Park Task Force (Meeting dates TBA)
- [x] Events Task Force (Meeting dates TBA)
- [ ] Planning, Development, and Zoning Commission(Meets 2nd and 4th Monday of the month at 7:00 p.m.)
- [x] Manvel Economic Development Corporation (Meets 2nd Wednesday of the month at 7:00 p.m.)
- [ ] Zoning Board of Adjustments (Meets as needed)
- [ ] TIRZ 3 Board
- [ ] SMDA Board (Meets as needed)
- [ ] Building & Standards Commission (Meets as needed)
- [ ] Parks and Recreation Board (Meets 1st Wednesday of the month at 6:30 p.m.)
- [ ] Rental Appeals Board (Meets as needed)
- [x] YES, I would be interested in serving on subcommittees that may be formed

Personal Information

Home Address*

37 Terra Bella Drive

Telephone*

Fax #

Email Address*

How many years have you been a resident of Manvel?*

15

Are you a registered voter?*

- [x] Yes
- [ ] No

Occupational Information

Are you a business owner?*

- [ ] Yes
- [x] No

Business Name

Occupation

homemaker/community advocate

Business Address

Telephone #

Fax #

Are you a Citizen of the United States?*

- [x] Yes
- [ ] No

Do you have a current Driver's License?*

- [x] Yes
- [ ] No

Driver's License #*

Exp Date*

DOB*

Have you ever been convicted of a felony?*

- [ ] Yes
- [x] No

If yes, explain

Have you been convicted of, received probation or deferred adjudication for, any offense that was not a felony within the last 10 years?*

- [ ] Yes
- [x] No

If yes, explain

Are you, or have ever been, an adversary party to pending litigation against the City of Manvel?*

- [ ] Yes
- [x] No

If yes, explain

Have you ever, or do you currently serve on any city boards?*

- [ ] Yes
- [x] No

If so, what board/city and dates?

How many city board meetings have you attended in the last 3 months?*

6

What board meetings did you attend?

City Council, MEDC, PD&Z

Are you involved in any community activities? (Civic or Hobbies)*

- [x] Yes
- [ ] No

If yes, explain

I attend various events for the Alvin-Manvel Chamber, Pearland Chamber, party meet and greets, business openings, local HOA meetings and City of Manvel functions.

Are you related to any City Employee or Council Member?*

- [ ] Yes
- [x] No

if so, please state who:

Do you have any outstanding taxes or other debt owed to the city?*

- [ ] Yes
- [x] No

Explanation

Have you been cited in the past year for non-compliance of any City Codes/Ordinances*

- [ ] Yes
- [x] No

If yes, explain

Please indicate briefly why you would like to be appointed to a Board or Commission:*

I appreciate the time and commitment it takes to be a part of this board. This group determines, with the City, how to use sales tax money to help small businesses and infrastructure for Manvel. I enjoy and am grateful to share my experience and insight on how to decide what is best for our business growth in our City.

PROVIDE ALL INFORMATION REQUESTED: INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED FOR BOARD/COMMISSION OPPORTUNITIES. Your complete application form will be maintained in our active files for one year from the date of the application. I understand that should I not be appointed to a City of Manvel board or commission, this application and any other records obtained, collected or otherwise prepared regarding this application shall be maintained in accordance with the Texas Public Information Act and the City of Manvel's document retention schedule.

DISCLAIMER AND SIGNATURE

I certify that my answers above are true and complete. I understand that the information contained in this application may be considered among other criteria, qualifications and/or information, by the City Council in its evaluation for the position being sought. I further understand that should I be appointed to any City of Manvel board or commission, I serve at the pleasure of the City Council and may be removed from said position at any time and for any reason or no reason at all, with our without notice. I also understand that should I be appointed to a City of Manvel board or commission, I must be responsible for a creditable record of attendance and performance. If this application leads to my appointment to a position on a City of Manvel Board or Commission, I understand that false or misleading information in my application may result in my removal from my position.

I authorize the City of Manvel to conduct a background check to verify all data given in this application.

I have carefully read and understand the above statement.

Electronic Signature* Lorraine Hehn

Date* 1/19/2022

FOR OFFICE USE ONLY

Date application received _____ New applicant? ☐ Yes ☐ No

If no, applicant previously served on _____

Via: ☐ Website ☐ Mail ☐ In-person ☐ Newspaper

Appointment made to: _____ Term expires:_____

☐ Statement & Oath completed

☐ No appointment made at this time, retain application for one year.

Print

Boards & Commissions Volunteer Application - Submission #320

Date Submitted: 1/11/2022

City of Manvel Board & Commission Application

INSTRUCTIONS: Please complete the entire form and sign at the bottom of the second page. A copy of your Driver's License or other state issued ID will need to be attached to the application in order for it to be processed. Please return your completed application to the City Secretary's Office at 20025 HWY 6, Manvel Tx 77578. Please note, knowingly making a false entry in, or false alteration of, a governmental record is an offense under section 37.10 of the Texas Penal Code and, upon conviction, may subject a violator to criminal penalties.

QUALIFICATIONS: In addition to the qualifications for service on a board required by city ordinances or state law, a person appointed to a board must not be delinquent in the payment of taxes, water service charge or other obligation to the city.

Name*

DONALD EUGENE ATKINSON

Please indicate your preference below*

- [ ] Croix Park Task Force (Meeting dates TBA)
- [ ] Events Task Force (Meeting dates TBA)
- [ ] Planning, Development, and Zoning Commission(Meets 2nd and 4th Monday of the month at 7:00 p.m.)
- [x] Manvel Economic Development Corporation (Meets 2nd Wednesday of the month at 7:00 p.m.)
- [ ] Zoning Board of Adjustments (Meets as needed)
- [ ] TIRZ 3 Board
- [ ] SMDA Board (Meets as needed)
- [ ] Building & Standards Commission (Meets as needed)
- [ ] Parks and Recreation Board (Meets 1st Wednesday of the month at 6:30 p.m.)
- [ ] Rental Appeals Board (Meets as needed)
- [ ] YES, I would be interested in serving on subcommittees that may be formed

Personal Information

Home Address*

7425 Jordan Rd

Telephone*

Fax #

Email Address*

How many years have you been a resident of Manvel?*

14 years

Are you a registered voter?*

- [x] Yes
- [ ] No

Occupational Information

Are you a business owner?*

- [ ] Yes
- [x] No

Business Name

Louisiana Electric Resource & Supply (LERS)

Occupation

Manager

Business Address

4903 W, Sam Houston Pkwy N. Houston, TX 77041

Telephone #

Fax #

Are you a Citizen of the United States?*

- [x] Yes
- [ ] No

Do you have a current Driver's License?*

- [x] Yes
- [ ] No

Driver's License #*

Exp Date*

DOB*

Have you ever been convicted of a felony?*

- [ ] Yes
- [x] No

If yes, explain

Have you been convicted of, received probation or deferred adjudication for, any offense that was not a felony within the last 10 years?*

- [x] Yes
- [ ] No

If yes, explain

Speeding ticket

Are you, or have ever been, an adversary party to pending litigation against the City of Manvel?*

- [ ] Yes
- [x] No

If yes, explain

Have you ever, or do you currently serve on any city boards?*

- [ ] Yes
- [x] No

If so, what board/city and dates?

Manvel

How many city board meetings have you attended in the last 3 months?*

Manvel

What board meetings did you attend?

Are you involved in any community activities? (Civic or Hobbies)*

- [ ] Yes
- [x] No

If yes, explain

Are you related to any City Employee or Council Member?*

- [ ] Yes
- [x] No

if so, please state who:

TX

Do you have any outstanding taxes or other debt owed to the city?*

- [ ] Yes
- [x] No

Explanation

Have you been cited in the past year for non-compliance of any City Codes/Ordinances*

- [ ] Yes
- [x] No

If yes, explain

Please indicate briefly why you would like to be appointed to a Board or Commission:*

Trying to get more involved in community and the City of Manvel.

PROVIDE ALL INFORMATION REQUESTED: INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED FOR BOARD/COMMISSION OPPORTUNITIES. Your complete application form will be maintained in our active files for one year from the date of the application. I understand that should I not be appointed to a City of Manvel board or commission, this application and any other records obtained, collected or otherwise prepared regarding this application shall be maintained in accordance with the Texas Public Information Act and the City of Manvel's document retention schedule.

DISCLAIMER AND SIGNATURE

I certify that my answers above are true and complete. I understand that the information contained in this application may be considered among other criteria, qualifications and/or information, by the City Council in its evaluation for the position being sought. I further understand that should I be appointed to any City of Manvel board or commission, I serve at the pleasure of the City Council and may be removed from said position at any time and for any reason or no reason at all, with our without notice. I also understand that should I be appointed to a City of Manvel board or commission, I must be responsible for a creditable record of attendance and performance. If this application leads to my appointment to a position on a City of Manvel Board or Commission, I understand that false or misleading information in my application may result in my removal from my position.

I authorize the City of Manvel to conduct a background check to verify all data given in this application.

I have carefully read and understand the above statement.

Electronic Signature* Donald Atkinson

Date* 1/11/2022

FOR OFFICE USE ONLY

Date application received _____ New applicant? ☐ Yes ☐ No

If no, applicant previously served on _____

Via: ☐ Website ☐ Mail ☐ In-person ☐ Newspaper

Appointment made to: _____ Term expires: _____

☐ Statement & Oath completed

☐ No appointment made at this time, retain application for one year.

Print

Boards & Commissions Volunteer Application - Submission #327

Date Submitted: 1/18/2022

City of Manvel Board & Commission Application

INSTRUCTIONS: Please complete the entire form and sign at the bottom of the second page. A copy of your Driver's License or other state issued ID will need to be attached to the application in order for it to be processed. Please return your completed application to the City Secretary's Office at 20025 HWY 6, Manvel Tx 77578. Please note, knowingly making a false entry in, or false alteration of, a governmental record is an offense under section 37.10 of the Texas Penal Code and, upon conviction, may subject a violator to criminal penalties.

QUALIFICATIONS: In addition to the qualifications for service on a board required by city ordinances or state law, a person appointed to a board must not be delinquent in the payment of taxes, water service charge or other obligation to the city.

Name*

Ahmad Alaswad

Please indicate your preference below*

- [ ] Croix Park Task Force (Meeting dates TBA)
- [ ] Events Task Force (Meeting dates TBA)
- [x] Planning, Development, and Zoning Commission(Meets 2nd and 4th Monday of the month at 7:00 p.m.)
- [x] Manvel Economic Development Corporation (Meets 2nd Wednesday of the month at 7:00 p.m.)
- [ ] Zoning Board of Adjustments (Meets as needed)
- [x] TIRZ 3 Board
- [ ] SMDA Board (Meets as needed)
- [ ] Building & Standards Commission (Meets as needed)
- [ ] Parks and Recreation Board (Meets 1st Wednesday of the month at 6:30 p.m.)
- [ ] Rental Appeals Board (Meets as needed)
- [ ] YES, I would be interested in serving on subcommittees that may be formed

Personal Information

Home Address*

4316 Pine Harvest Lane

Telephone*

Fax #

Email Address*

How many years have you been a resident of Manvel?*

5

Are you a registered voter?*

- [x] Yes
- [ ] No

Occupational Information

Are you a business owner?*

- [ ] Yes
- [x] No

Business Name

Occupation

Government

Business Address

Telephone #

Fax #

Are you a Citizen of the United States?*

- [x] Yes
- [ ] No

Do you have a current Driver's License?*

- [x] Yes
- [ ] No

Driver's License #*

Exp Date*

DOB*

Have you ever been convicted of a felony?*

- [ ] Yes
- [x] No

If yes, explain

Have you been convicted of, received probation or deferred adjudication for, any offense that was not a felony within the last 10 years?*

- [ ] Yes
- [x] No

If yes, explain

Are you, or have ever been, an adversary party to pending litigation against the City of Manvel?*

- [ ] Yes
- [x] No

If yes, explain

Have you ever, or do you currently serve on any city boards?*

- [ ] Yes
- [x] No

If so, what board/city and dates?

How many city board meetings have you attended in the last 3 months?*

0

What board meetings did you attend?

Are you involved in any community activities? (Civic or Hobbies)*

- [x] Yes
- [ ] No

If yes, explain

President of MUD 39

Are you related to any City Employee or Council Member?*

- [ ] Yes
- [x] No

if so, please state who:

Do you have any outstanding taxes or other debt owed to the city?*

- [ ] Yes
- [x] No

Explanation

Have you been cited in the past year for non-compliance of any City Codes/Ordinances*

- [ ] Yes
- [x] No

If yes, explain

Please indicate briefly why you would like to be appointed to a Board or Commission:*

I want to give back to my community.

PROVIDE ALL INFORMATION REQUESTED: INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED FOR BOARD/COMMISSION OPPORTUNITIES. Your complete application form will be maintained in our active files for one year from the date of the application. I understand that should I not be appointed to a City of Manvel board or commission, this application and any other records obtained, collected or otherwise prepared regarding this application shall be maintained in accordance with the Texas Public Information Act and the City of Manvel's document retention schedule.

DISCLAIMER AND SIGNATURE

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I authorize the City of Manvel to conduct a background check to verify all data given in this application.

I have carefully read and understand the above statement.

Electronic Signature* Ahmad Alaswad

Date* 1/18/2022

FOR OFFICE USE ONLY

Date application received _____ New applicant? ☐ Yes ☐ No

If no, applicant previously served on _____

Via: ☐ Website ☐ Mail ☐ In-person ☐ Newspaper

Appointment made to: _____ Term expires:_____

☐ Statement & Oath completed

☐ No appointment made at this time, retain application for one year.

Print

Boards & Commissions Volunteer Application - Submission #330

Date Submitted: 1/23/2022

City of Manvel Board & Commission Application

INSTRUCTIONS: Please complete the entire form and sign at the bottom of the second page. A copy of your Driver's License or other state issued ID will need to be attached to the application in order for it to be processed. Please return your completed application to the City Secretary's Office at 20025 HWY 6, Manvel Tx 77578. Please note, knowingly making a false entry in, or false alteration of, a governmental record is an offense under section 37.10 of the Texas Penal Code and, upon conviction, may subject a violator to criminal penalties.

QUALIFICATIONS: In addition to the qualifications for service on a board required by city ordinances or state law, a person appointed to a board must not be delinquent in the payment of taxes, water service charge or other obligation to the city.

Name*

Vivekavardhan Ravipati

Please indicate your preference below*

- [ ] Croix Park Task Force (Meeting dates TBA)
- [x] Events Task Force (Meeting dates TBA)
- [ ] Planning, Development, and Zoning Commission(Meets 2nd and 4th Monday of the month at 7:00 p.m.)
- [x] Manvel Economic Development Corporation (Meets 2nd Wednesday of the month at 7:00 p.m.)
- [ ] Zoning Board of Adjustments (Meets as needed)
- [ ] TIRZ 3 Board
- [ ] SMDA Board (Meets as needed)
- [ ] Building & Standards Commission (Meets as needed)
- [ ] Parks and Recreation Board (Meets 1st Wednesday of the month at 6:30 p.m.)
- [ ] Rental Appeals Board (Meets as needed)
- [x] YES, I would be interested in serving on subcommittees that may be formed

Personal Information

Home Address*

4802 ASHLAND GLEN LN, Manvel TX

Telephone*

Fax #

Email Address*

How many years have you been a resident of Manvel?*

1

Are you a registered voter?*

- [x] Yes
- [ ] No

Occupational Information

Are you a business owner?*

- [ ] Yes
- [x] No

Business Name

Occupation

Business Address

Telephone #

Fax #

Are you a Citizen of the United States?*

- [x] Yes
- [ ] No

Do you have a current Driver's License?*

- [x] Yes
- [ ] No

Driver's License #*

Exp Date*

DOB*

Have you ever been convicted of a felony?*

- [ ] Yes
- [x] No

If yes, explain

Have you been convicted of, received probation or deferred adjudication for, any offense that was not a felony within the last 10 years?*

- [ ] Yes
- [x] No

If yes, explain

Are you, or have ever been, an adversary party to pending litigation against the City of Manvel?*

- [ ] Yes
- [x] No

If yes, explain

Have you ever, or do you currently serve on any city boards?*

- [ ] Yes
- [x] No

If so, what board/city and dates?

How many city board meetings have you attended in the last 3 months?*

0

What board meetings did you attend?

Are you involved in any community activities? (Civic or Hobbies)*

- [ ] Yes
- [x] No

If yes, explain

Not involved in any currently but plan to be involved in 2022!

Are you related to any City Employee or Council Member?*

- [ ] Yes
- [x] No

if so, please state who:

Do you have any outstanding taxes or other debt owed to the city?*

- [ ] Yes
- [x] No

Explanation

Have you been cited in the past year for non-compliance of any City Codes/Ordinances*

- [ ] Yes
- [x] No

If yes, explain

Please indicate briefly why you would like to be appointed to a Board or Commission:*

Hello!

My name is Vivek Ravipati and I recently moved to Manvel, TX with my family in 2020! What attracted us to Manvel is the diversified, growing and beautiful city that seems to be in the forefront of massive growth over the next few years! I would love to volunteer my time in any organization that is looking for volunteers as I am really passionate about local governments and I would love to see behind the scenes and how they operate. Since I am relatively young, I believe I can bring a fresh perspective to these organizations as well!

Thank you for your time and please let me know if you have any questions!

PROVIDE ALL INFORMATION REQUESTED: INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED FOR BOARD/COMMISSION OPPORTUNITIES. Your complete application form will be maintained in our active files for one year from the date of the application. I understand that should I not be appointed to a City of Manvel board or commission, this application and any other records obtained, collected or otherwise prepared regarding this application shall be maintained in accordance with the Texas Public Information Act and the City of Manvel's document retention schedule.

DISCLAIMER AND SIGNATURE

I certify that my answers above are true and complete. I understand that the information contained in this application may be considered among other criteria, qualifications and/or information, by the City Council in its evaluation for the position being sought. I further understand that should I be appointed to any City of Manvel board or commission, I serve at the pleasure of the City Council and may be removed from said position at any time and for any reason or no reason at all, with our without notice. I also understand that should I be appointed to a City of Manvel board or commission, I must be responsible for a creditable record of attendance and performance. If this application leads to my appointment to a position on a City of Manvel Board or Commission, I understand that false or misleading information in my application may result in my removal from my position.

I authorize the City of Manvel to conduct a background check to verify all data given in this application.

I have carefully read and understand the above statement.

Electronic Signature* Vivekavardhan Ravipati

Date* 1/23/2022

FOR OFFICE USE ONLY

Date application received _____ New applicant? ☐ Yes ☐ No

If no, applicant previously served on _____

Via: ☐ Website ☐ Mail ☐ In-person ☐ Newspaper

Appointment made to: _____ Term expires: _____

☐ Statement & Oath completed

☐ No appointment made at this time, retain application for one year.

Print

Boards & Commissions Volunteer Application - Submission #326

Date Submitted: 1/15/2022

City of Manvel Board & Commission Application

INSTRUCTIONS: Please complete the entire form and sign at the bottom of the second page. A copy of your Driver's License or other state issued ID will need to be attached to the application in order for it to be processed. Please return your completed application to the City Secretary's Office at 20025 HWY 6, Manvel Tx 77578. Please note, knowingly making a false entry in, or false alteration of, a governmental record is an offense under section 37.10 of the Texas Penal Code and, upon conviction, may subject a violator to criminal penalties.

QUALIFICATIONS: In addition to the qualifications for service on a board required by city ordinances or state law, a person appointed to a board must not be delinquent in the payment of taxes, water service charge or other obligation to the city.

Name*

Byron Carter

Please indicate your preference below*

- [ ] Croix Park Task Force (Meeting dates TBA)
- [ ] Events Task Force (Meeting dates TBA)
- [ ] Planning, Development, and Zoning Commission(Meets 2nd and 4th Monday of the month at 7:00 p.m.)
- [x] Manvel Economic Development Corporation (Meets 2nd Wednesday of the month at 7:00 p.m.)
- [ ] Zoning Board of Adjustments (Meets as needed)
- [ ] TIRZ 3 Board
- [ ] SMDA Board (Meets as needed)
- [ ] Building & Standards Commission (Meets as needed)
- [ ] Parks and Recreation Board (Meets 1st Wednesday of the month at 6:30 p.m.)
- [ ] Rental Appeals Board (Meets as needed)
- [ ] YES, I would be interested in serving on subcommittees that may be formed

Personal Information

Home Address*

5123 Blue Canoe

Telephone*

Fax #

Email Address*

How many years have you been a resident of Manvel?*

5

Are you a registered voter?*

- [x] Yes
- [ ] No

Occupational Information

Are you a business owner?*

- [x] Yes
- [ ] No

Business Name

Century 21 Olympian agent

Occupation

Real Estate

Business Address

5123 Blue Canoe

Telephone #

Fax #

Are you a Citizen of the United States?*

- [x] Yes
- [ ] No

Do you have a current Driver's License?*

- [x] Yes
- [ ] No

Driver's License #*

Exp Date*

DOB*

Have you ever been convicted of a felony?*

- [ ] Yes
- [x] No

If yes, explain

Have you been convicted of, received probation or deferred adjudication for, any offense that was not a felony within the last 10 years?*

- [ ] Yes
- [x] No

If yes, explain

Are you, or have ever been, an adversary party to pending litigation against the City of Manvel?*

- [ ] Yes
- [x] No

If yes, explain

Have you ever, or do you currently serve on any city boards?*

- [ ] Yes
- [x] No

If so, what board/city and dates?

Manvel

How many city board meetings have you attended in the last 3 months?*

Manvel

What board meetings did you attend?

Are you involved in any community activities? (Civic or Hobbies)*

- [x] Yes
- [ ] No

If yes, explain

Manvel High Cheerleaders/Chamber meetings periodically

Are you related to any City Employee or Council Member?*

- [ ] Yes
- [x] No

if so, please state who:

TX

Do you have any outstanding taxes or other debt owed to the city?*

- [ ] Yes
- [x] No

Explanation

Have you been cited in the past year for non-compliance of any City Codes/Ordinances*

- [ ] Yes
- [x] No

If yes, explain

Please indicate briefly why you would like to be appointed to a Board or Commission:*

I love our growing City, we have Manvel students, I lived in the community for 5 years, I work well with leaders whether no matter if the politician party and my time is free to work at this time.

PROVIDE ALL INFORMATION REQUESTED: INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED FOR BOARD/COMMISSION OPPORTUNITIES. Your complete application form will be maintained in our active files for one year from the date of the application. I understand that should I not be appointed to a City of Manvel board or commission, this application and any other records obtained, collected or otherwise prepared regarding this application shall be maintained in accordance with the Texas Public Information Act and the City of Manvel's document retention schedule.

DISCLAIMER AND SIGNATURE

I certify that my answers above are true and complete. I understand that the information contained in this application may be considered among other criteria, qualifications and/or information, by the City Council in its evaluation for the position being sought. I further understand that should I be appointed to any City of Manvel board or commission, I serve at the pleasure of the City Council and may be removed from said position at any time and for any reason or no reason at all, with our without notice. I also understand that should I be appointed to a City of Manvel board or commission, I must be responsible for a creditable record of attendance and performance. If this application leads to my appointment to a position on a City of Manvel Board or Commission, I understand that false or misleading information in my application may result in my removal from my position.

I authorize the City of Manvel to conduct a background check to verify all data given in this application.

I have carefully read and understand the above statement.

Electronic Signature* Byron Carter

Date* 1/15/2022

FOR OFFICE USE ONLY

Date application received _____ New applicant? ☐ Yes ☐ No

If no, applicant previously served on _____

Via: ☐ Website ☐ Mail ☐ In-person ☐ Newspaper

Appointment made to: _____ Term expires: _____

☐ Statement & Oath completed

☐ No appointment made at this time, retain application for one year.

Print

Boards & Commissions Volunteer Application - Submission #322

Date Submitted: 1/12/2022

City of Manvel Board & Commission Application

INSTRUCTIONS: Please complete the entire form and sign at the bottom of the second page. A copy of your Driver's License or other state issued ID will need to be attached to the application in order for it to be processed. Please return your completed application to the City Secretary's Office at 20025 HWY 6, Manvel Tx 77578. Please note, knowingly making a false entry in, or false alteration of, a governmental record is an offense under section 37.10 of the Texas Penal Code and, upon conviction, may subject a violator to criminal penalties.

QUALIFICATIONS: In addition to the qualifications for service on a board required by city ordinances or state law, a person appointed to a board must not be delinquent in the payment of taxes, water service charge or other obligation to the city.

Name*

Christy Kennard

Please indicate your preference below*

- [ ] Croix Park Task Force (Meeting dates TBA)
- [ ] Events Task Force (Meeting dates TBA)
- [x] Planning, Development, and Zoning Commission(Meets 2nd and 4th Monday of the month at 7:00 p.m.)
- [ ] Manvel Economic Development Corporation (Meets 2nd Wednesday of the month at 7:00 p.m.)
- [ ] Zoning Board of Adjustments (Meets as needed)
- [ ] TIRZ 3 Board
- [ ] SMDA Board (Meets as needed)
- [ ] Building & Standards Commission (Meets as needed)
- [ ] Parks and Recreation Board (Meets 1st Wednesday of the month at 6:30 p.m.)
- [ ] Rental Appeals Board (Meets as needed)
- [ ] YES, I would be interested in serving on subcommittees that may be formed

Personal Information

Home Address*

6305 Cemetery Rd

Telephone*

Fax #

Email Address*

How many years have you been a resident of Manvel?*

6.5

Are you a registered voter?*

- [x] Yes
- [ ] No

Occupational Information

Are you a business owner?*

- [ ] Yes
- [x] No

Business Name

Occupation

Business Address

Telephone #

Fax #

Are you a Citizen of the United States?*

- [x] Yes
- [ ] No

Do you have a current Driver's License?*

- [x] Yes
- [ ] No

Driver's License #*

Exp Date*

DOB*

Have you ever been convicted of a felony?*

- [ ] Yes
- [x] No

If yes, explain

Have you been convicted of, received probation or deferred adjudication for, any offense that was not a felony within the last 10 years?*

- [ ] Yes
- [x] No

If yes, explain

Are you, or have ever been, an adversary party to pending litigation against the City of Manvel?*

- [ ] Yes
- [x] No

If yes, explain

Have you ever, or do you currently serve on any city boards?*

- [x] Yes
- [ ] No

If so, what board/city and dates?

Planning and zoning, 2 years

How many city board meetings have you attended in the last 3 months?*

0

What board meetings did you attend?

Are you involved in any community activities? (Civic or Hobbies)*

- [ ] Yes
- [x] No

If yes, explain

Are you related to any City Employee or Council Member?*

- [ ] Yes
- [x] No

if so, please state who:

Do you have any outstanding taxes or other debt owed to the city?*

- [ ] Yes
- [x] No

Explanation

Have you been cited in the past year for non-compliance of any City Codes/Ordinances*

- [ ] Yes
- [x] No

If yes, explain

Please indicate briefly why you would like to be appointed to a Board or Commission:*

I have been on the committee for the last two years and have enjoyed learning about the city regulations. I feel that my experience as a realtor, combined with my experience on the PD&Z commission currently help me to be an asset to the city.

PROVIDE ALL INFORMATION REQUESTED: INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED FOR BOARD/COMMISSION OPPORTUNITIES. Your complete application form will be maintained in our active files for one year from the date of the application. I understand that should I not be appointed to a City of Manvel board or commission, this application and any other records obtained, collected or otherwise prepared regarding this application shall be maintained in accordance with the Texas Public Information Act and the City of Manvel's document retention schedule.

DISCLAIMER AND SIGNATURE

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I authorize the City of Manvel to conduct a background check to verify all data given in this application.

I have carefully read and understand the above statement.

Electronic Signature* Christy Kennard

Date* 1/12/2022

FOR OFFICE USE ONLY

Date application received _____ New applicant? ☐ Yes ☐ No

If no, applicant previously served on _____

Via: ☐ Website ☐ Mail ☐ In-person ☐ Newspaper

Appointment made to: _____ Term expires:_____

☐ Statement & Oath completed

☐ No appointment made at this time, retain application for one year.

Print

Boards & Commissions Volunteer Application - Submission #343

Date Submitted: 2/15/2022

City of Manvel Board & Commission Application

INSTRUCTIONS: Please complete the entire form and sign at the bottom of the second page. A copy of your Driver's License or other state issued ID will need to be attached to the application in order for it to be processed. Please return your completed application to the City Secretary's Office at 20025 HWY 6, Manvel Tx 77578. Please note, knowingly making a false entry in, or false alteration of, a governmental record is an offense under section 37.10 of the Texas Penal Code and, upon conviction, may subject a violator to criminal penalties.

QUALIFICATIONS: In addition to the qualifications for service on a board required by city ordinances or state law, a person appointed to a board must not be delinquent in the payment of taxes, water service charge or other obligation to the city.

Name*

Dorothy Wynne

Please indicate your preference below*

- [ ] Croix Park Task Force (Meeting dates TBA)
- [ ] Events Task Force (Meeting dates TBA)
- [x] Planning, Development, and Zoning Commission(Meets 2nd and 4th Monday of the month at 7:00 p.m.)
- [ ] Manvel Economic Development Corporation (Meets 2nd Wednesday of the month at 7:00 p.m.)
- [ ] Zoning Board of Adjustments (Meets as needed)
- [ ] TIRZ 3 Board
- [ ] SMDA Board (Meets as needed)
- [ ] Building & Standards Commission (Meets as needed)
- [ ] Parks and Recreation Board (Meets 1st Wednesday of the month at 6:30 p.m.)
- [ ] Rental Appeals Board (Meets as needed)
- [ ] YES, I would be interested in serving on subcommittees that may be formed

Personal Information

Home Address*

9825 masters road Manvel 77578

Telephone*

Fax #

Email Address*

How many years have you been a resident of Manvel?*

19

Are you a registered voter?*

- [x] Yes
- [ ] No

Occupational Information

Are you a business owner?*

- [x] Yes
- [ ] No

Business Name

sundance Horse Ranch/ JWD Guest Ranch

Occupation

Business Address

9825 masters Road Manvel 77578

Telephone #

Fax #

Are you a Citizen of the United States?*

- [x] Yes
- [ ] No

Do you have a current Driver's License?*

- [x] Yes
- [ ] No

Driver's License #*

Exp Date*

DOB*

Have you ever been convicted of a felony?*

- [ ] Yes
- [x] No

If yes, explain

Have you been convicted of, received probation or deferred adjudication for, any offense that was not a felony within the last 10 years?*

- [ ] Yes
- [x] No

If yes, explain

Are you, or have ever been, an adversary party to pending litigation against the City of Manvel?*

- [ ] Yes
- [x] No

If yes, explain

Have you ever, or do you currently serve on any city boards?*

- [x] Yes
- [ ] No

If so, what board/city and dates?

How many city board meetings have you attended in the last 3 months?*

only one. Surgery kept me home since december 6th

What board meetings did you attend?

Are you involved in any community activities? (Civic or Hobbies)*

- [x] Yes
- [ ] No

If yes, explain

Love to ride in those parades and school career day

Are you related to any City Employee or Council Member?*

- [ ] Yes
- [x] No

if so, please state who:

Do you have any outstanding taxes or other debt owed to the city?*

- [ ] Yes
- [x] No

Explanation

Have you been cited in the past year for non-compliance of any City Codes/Ordinances*

- [ ] Yes
- [x] No

If yes, explain

Please indicate briefly why you would like to be appointed to a Board or Commission:*

I would like to continue with my knowledge of the current subdivisions going up in the area and train others in service to boards.

PROVIDE ALL INFORMATION REQUESTED: INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED FOR BOARD/COMMISSION OPPORTUNITIES. Your complete application form will be maintained in our active files for one year from the date of the application. I understand that should I not be appointed to a City of Manvel board or commission, this application and any other records obtained, collected or otherwise prepared regarding this application shall be maintained in accordance with the Texas Public Information Act and the City of Manvel's document retention schedule.

DISCLAIMER AND SIGNATURE

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I authorize the City of Manvel to conduct a background check to verify all data given in this application.

I have carefully read and understand the above statement.

Electronic Signature* Dorothy Wynne

Date* 2/15/2022

FOR OFFICE USE ONLY

Date application received _____ New applicant? ☐ Yes ☐ No

If no, applicant previously served on _____

Via: ☐ Website ☐ Mail ☐ In-person ☐ Newspaper

Appointment made to: _____ Term expires:_____

☐ Statement & Oath completed

☐ No appointment made at this time, retain application for one year.

Print

Boards & Commissions Volunteer Application - Submission #334

Date Submitted: 1/26/2022

City of Manvel Board & Commission Application

INSTRUCTIONS: Please complete the entire form and sign at the bottom of the second page. A copy of your Driver's License or other state issued ID will need to be attached to the application in order for it to be processed. Please return your completed application to the City Secretary's Office at 20025 HWY 6, Manvel Tx 77578. Please note, knowingly making a false entry in, or false alteration of, a governmental record is an offense under section 37.10 of the Texas Penal Code and, upon conviction, may subject a violator to criminal penalties.

QUALIFICATIONS: In addition to the qualifications for service on a board required by city ordinances or state law, a person appointed to a board must not be delinquent in the payment of taxes, water service charge or other obligation to the city.

Name*

Muhammed Alam

Please indicate your preference below*

- [ ] Croix Park Task Force (Meeting dates TBA)
- [ ] Events Task Force (Meeting dates TBA)
- [x] Planning, Development, and Zoning Commission(Meets 2nd and 4th Monday of the month at 7:00 p.m.)
- [ ] Manvel Economic Development Corporation (Meets 2nd Wednesday of the month at 7:00 p.m.)
- [ ] Zoning Board of Adjustments (Meets as needed)
- [ ] TIRZ 3 Board
- [ ] SMDA Board (Meets as needed)
- [ ] Building & Standards Commission (Meets as needed)
- [ ] Parks and Recreation Board (Meets 1st Wednesday of the month at 6:30 p.m.)
- [ ] Rental Appeals Board (Meets as needed)
- [ ] YES, I would be interested in serving on subcommittees that may be formed

Personal Information

Home Address*

57 Atascadero dr. Manvel, Texas-77578

Telephone*

Fax #

Email Address*

How many years have you been a resident of Manvel?*

11 years

Are you a registered voter?*

- [x] Yes
- [ ] No

Occupational Information

Are you a business owner?*

- [ ] Yes
- [x] No

Business Name

Occupation

Business Address

Telephone #

Fax #

Are you a Citizen of the United States?*

- [x] Yes
- [ ] No

Do you have a current Driver's License?*

- [x] Yes
- [ ] No

Driver's License #*

Exp Date*

DOB*

Have you ever been convicted of a felony?*

- [ ] Yes
- [x] No

If yes, explain

Have you been convicted of, received probation or deferred adjudication for, any offense that was not a felony within the last 10 years?*

- [ ] Yes
- [x] No

If yes, explain

Are you, or have ever been, an adversary party to pending litigation against the City of Manvel?*

- [ ] Yes
- [x] No

If yes, explain

Have you ever, or do you currently serve on any city boards?*

- [x] Yes
- [ ] No

If so, what board/city and dates?

PD&Z , March/2018

How many city board meetings have you attended in the last 3 months?*

4

What board meetings did you attend?

PD&Z

Are you involved in any community activities? (Civic or Hobbies)*

- [ ] Yes
- [x] No

If yes, explain

Are you related to any City Employee or Council Member?*

- [ ] Yes
- [x] No

if so, please state who:

Do you have any outstanding taxes or other debt owed to the city?*

- [ ] Yes
- [x] No

Explanation

Have you been cited in the past year for non-compliance of any City Codes/Ordinances*

- [ ] Yes
- [x] No

If yes, explain

Please indicate briefly why you would like to be appointed to a Board or Commission:*

Citizen of the city responsibility.

PROVIDE ALL INFORMATION REQUESTED: INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED FOR BOARD/COMMISSION OPPORTUNITIES. Your complete application form will be maintained in our active files for one year from the date of the application. I understand that should I not be appointed to a City of Manvel board or commission, this application and any other records obtained, collected or otherwise prepared regarding this application shall be maintained in accordance with the Texas Public Information Act and the City of Manvel's document retention schedule.

DISCLAIMER AND SIGNATURE

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I authorize the City of Manvel to conduct a background check to verify all data given in this application.

I have carefully read and understand the above statement.

Electronic Signature* Muhammed Alam

Date* 1/26/2022

FOR OFFICE USE ONLY

Date application received _____ New applicant? ☐ Yes ☐ No

If no, applicant previously served on _____

Via: ☐ Website ☐ Mail ☐ In-person ☐ Newspaper

Appointment made to: _____ Term expires:_____

☐ Statement & Oath completed

☐ No appointment made at this time, retain application for one year.

Print

Boards & Commissions Volunteer Application - Submission #333

Date Submitted: 1/24/2022

City of Manvel Board & Commission Application

INSTRUCTIONS: Please complete the entire form and sign at the bottom of the second page. A copy of your Driver's License or other state issued ID will need to be attached to the application in order for it to be processed. Please return your completed application to the City Secretary's Office at 20025 HWY 6, Manvel Tx 77578. Please note, knowingly making a false entry in, or false alteration of, a governmental record is an offense under section 37.10 of the Texas Penal Code and, upon conviction, may subject a violator to criminal penalties.

QUALIFICATIONS: In addition to the qualifications for service on a board required by city ordinances or state law, a person appointed to a board must not be delinquent in the payment of taxes, water service charge or other obligation to the city.

Name*

Mary Ann Atkinson

Please indicate your preference below*

- [ ] Croix Park Task Force (Meeting dates TBA)
- [ ] Events Task Force (Meeting dates TBA)
- [x] Planning, Development, and Zoning Commission(Meets 2nd and 4th Monday of the month at 7:00 p.m.)
- [ ] Manvel Economic Development Corporation (Meets 2nd Wednesday of the month at 7:00 p.m.)
- [ ] Zoning Board of Adjustments (Meets as needed)
- [ ] TIRZ 3 Board
- [ ] SMDA Board (Meets as needed)
- [ ] Building & Standards Commission (Meets as needed)
- [ ] Parks and Recreation Board (Meets 1st Wednesday of the month at 6:30 p.m.)
- [ ] Rental Appeals Board (Meets as needed)
- [ ] YES, I would be interested in serving on subcommittees that may be formed

Personal Information

Home Address*

7425 JORDAN RD, Please place over the fence

Telephone*

Fax #

Email Address*

How many years have you been a resident of Manvel?*

17

Are you a registered voter?*

- [x] Yes
- [ ] No

Occupational Information

Are you a business owner?*

- [ ] Yes
- [x] No

Business Name

Occupation

Office Manager

Business Address

Telephone #

Fax #

Are you a Citizen of the United States?*

- [x] Yes
- [ ] No

Do you have a current Driver's License?*

- [x] Yes
- [ ] No

Driver's License #*

Exp Date*

DOB*

Have you ever been convicted of a felony?*

- [ ] Yes
- [x] No

If yes, explain

Have you been convicted of, received probation or deferred adjudication for, any offense that was not a felony within the last 10 years?*

- [ ] Yes
- [x] No

If yes, explain

Are you, or have ever been, an adversary party to pending litigation against the City of Manvel?*

- [ ] Yes
- [x] No

If yes, explain

Have you ever, or do you currently serve on any city boards?*

- [x] Yes
- [ ] No

If so, what board/city and dates?

Events / Manvel / 2018-2019

How many city board meetings have you attended in the last 3 months?*

Manvel

What board meetings did you attend?

Parks in 2018-19

Are you involved in any community activities? (Civic or Hobbies)*

- [ ] Yes
- [x] No

If yes, explain

Are you related to any City Employee or Council Member?*

- [ ] Yes
- [x] No

if so, please state who:

TX

Do you have any outstanding taxes or other debt owed to the city?*

- [ ] Yes
- [x] No

Explanation

Have you been cited in the past year for non-compliance of any City Codes/Ordinances*

- [ ] Yes
- [x] No

If yes, explain

Please indicate briefly why you would like to be appointed to a Board or Commission:*

I would like to be more involved in the growth of Manvel the City on the Rise.

PROVIDE ALL INFORMATION REQUESTED: INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED FOR BOARD/COMMISSION OPPORTUNITIES. Your complete application form will be maintained in our active files for one year from the date of the application. I understand that should I not be appointed to a City of Manvel board or commission, this application and any other records obtained, collected or otherwise prepared regarding this application shall be maintained in accordance with the Texas Public Information Act and the City of Manvel's document retention schedule.

DISCLAIMER AND SIGNATURE

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I authorize the City of Manvel to conduct a background check to verify all data given in this application.

I have carefully read and understand the above statement.

Electronic Signature* Mary Ann Atkinson

Date* 1/24/2022

FOR OFFICE USE ONLY

Date application received _____ New applicant? ☐ Yes ☐ No

If no, applicant previously served on _____

Via: ☐ Website ☐ Mail ☐ In-person ☐ Newspaper

Appointment made to: _____ Term expires:_____

☐ Statement & Oath completed

☐ No appointment made at this time, retain application for one year.

ARTICLE IX. NOISE REGULATION

Sec. 44-160. Definitions.

The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, unless the context of their usage clearly indicates another meaning:

Daytime hours means the hours between 7:00 a.m. on one day and 9:00 p.m. the same day.

dB(A) means ~~the intensity of a sound expressed in decibels.~~ The intensity of sound expressed in decibels read from a calibrated sound level meter utilizing the A-level weighing scale and the slow meter response.

Decibel (db) *means the logarithmic unit of measure used to describe the amplitude of sound.*

Emergency means any occurrence or set of circumstances involving actual or imminent physical trauma or property damage or loss that demands immediate action.

Emergency work means any work performed for the purpose of preventing or alleviating the physical trauma or property damage threatened or caused by an emergency, or which is otherwise necessary to restore property to a safe condition following a fire, accident or natural disaster, or which is required to protect persons or property from exposure to danger, or which is required to restore public utilities.

Nighttime hours means the hours between 9:00 p.m. on one day and 7:00 a.m. the following day.

Person means any individual, association, partnership, or corporation, governmental unit, or other legal entity.

Property line means the line along the ground surface, and its vertical extension, which separates the real property owned, leased or occupied by one person from that owned, leased or occupied by another person and the imaginary line which represents the legal limits of property of any person who owns, leases or otherwise occupies an apartment, condominium, hotel or motel room, office or any other type of occupancy.

Public right-of-way means any street, avenue, boulevard, highway, road, thoroughfare, sidewalk, alley or any other property that is owned or controlled by a governmental entity.

Zoning Districts O-SFR (Open Single Family Residential); SFR (Single Family Residential); PUD (Planned Unit Development (commercial and residential uses)).; MF (Multi-family); LC (Light Commercial); HC (Heavy Commercial); HCMH (HUD-Code Manufactured Home(trailers)); HMU (Highway Mixed Use (commercial and residential)).

(Ord. No. 2012-O-21, § 2, 8-13-2012)

Sec. 44-161. General prohibition.

It shall be unlawful for any person to knowingly make, create, or assist in making, permit, continue, cause to be made or continued or permit the continuance of any sound which either exceeds the maximum permitted sound levels specified this article or which otherwise unreasonably disturbs, injures or endangers the comfort, repose, health, peace or safety or others within the limits of the city. ~~, after the person making the noise receives notice from a magistrate or peace officer that the noise is a public nuisance.~~

A. In determining whether a violation of this paragraph occurs, the following may be considered:

(1) The level, frequency or duration of the noise;

(2) The proximity of the noise to the dwelling or business;

(3) The nature and zoning of the area within which the noise occurs; and

(4) The time of day or night the noise occurs

B. The operation of any radio, speaker, musical instrument, sound amplifier, or other device used for producing or reproducing sound for entertainment purposes so as to be plainly audible within a dwelling, other than the dwelling where the sound-producing device is located, is prima facie evidence of a violation.

C. It is unlawful for a person to operate any radio, speaker, sound amplifier or similar device located within or upon a motor vehicle at a volume that is audible at a distance of more than 50 feet from the vehicle. The fact that the sound is audible at a distance of 50 feet from the vehicle is prima facie evidence of a violation of this subsection.

D. It is unlawful for any person operating a business that operates an outdoor playground as an accessory use if the playground is located within 500 feet of a dwelling, to intentionally or knowingly allow any person to make use of the playground between 10:00 p.m. and 6:00 a.m. of the following day.

E. E*xceptions to violations.*

(1) It is a defense to prosecution under paragraph (~~b~~B) of this section that the noise was caused by an employee, contractor, or agent of any city, county, public school, or other governmental entity or of a public service utility in the performance of his or her duties.

(2) It is a defense to prosecution under paragraph (~~b~~B) or (~~c~~)C) of this section that the noise sound was created by persons lawfully using a public facility.

(3) It is a defense to prosecutions under paragraph (~~b~~B), (~~c~~C) or (~~d~~D) of this section that the noise was caused by persons participating in a parade conducted on a public street pursuant to a parade permit.

Sec. 44-162. Maximum permissible sound levels.

A. No person shall conduct, permit or allow any activity or sound source to produce a noise that exceeds the following decibel levels:

(1) A decibel level of 65 dB(A) during daytime hours;

(2) A decibel level of 58 dB(A) during nighttime hours.

B. Except as provided by Subsection (E), it is unlawful for a person to operate on a Premises zoned HC, LC, HMU (nonresidential use), and PUD (nonresidential use) a noise source that causes the noise level to exceed 75 dB(A) during the day on a Premises zoned O-SFR, SFR, PUD (residential use), MF, HCMH, and HMU (residential use).

C. Except as provided by Subsection (E), it is unlawful for a person to operate on a Premises zoned HC, LC, HMU (nonresidential use), and PUD (nonresidential use) a noise source that causes the noise level to exceed 58 dB(A) during the night on a Premises zoned O-SFR, SFR, PUD (residential use), MF, HCMH, and HMU (residential use).

D. Noise level must be determined by measuring the dB(A) taken at 10 feet inside the property line of the Premises receiving the noise.

E. A person does not violate this Section if the noise source on a Premises zoned HC, LC, HMU (nonresidential use) and PUD (nonresidential use) does not:

1. Exceed 5 dB(A) over the dB(A) allowed by Subsections (A) and (B) if the noise source operates at a sustained level for less than 15 minutes in any 1-hour period;

2. Exceed 10 dB(A) over the dB(A) allowed by Subsections (A) and (B) if the noise source operates at a sustained level for less than 6 minutes in any 1-hour period;

3. Exceed 15 dB(A) over the dB(A) allowed by Subsections (A) and (B) if the noise source operates at a sustained level for less than 1.5 minutes in any 1-hour period

4. Occur as part of the typical operation of the Premises, including mowing, construction, tree trimming, and waste removal.

F. The dB(A) levels set forth in this section apply to the property where the sound is being received. Any sound that when measured at the property where the sound is being received exceeds the dB(A) levels set forth in this section is a violation of this article.

G. Evidence that an activity or sound source produces a sound that exceeds the dB(A) levels specified in this section, when measured at the site where the sound is being received, if available, shall be prima facie evidence of a sound nuisance which unreasonably disturbs, injures or endangers the comfort, repose, health, peace or safety of others within the limits of the city in violation of this chapter.

(Ord. No. 2012-O-21, § 2, 8-13-2012)

Sec. 44-163. General prohibitions.

In addition to the violation established by section 44-162, it shall be unlawful for any person to make, assist in making, permit, continue, cause to be made or continued or permit the continuance of any sound that substantially disturbs, injures or endangers the comfort, repose, health, peace or safety of others within the limits of the city.

Any noise of such character, intensity and duration which substantially interferes with the peaceful and comfortable enjoyment of private homes or businesses by persons of ordinary sensibilities is hereby declared to be a nuisance and is hereby prohibited. The following acts, among others, are declared to be loud, disturbing and unnecessary noises in violation of this section, but said enumeration shall not be deemed to be exclusive:

(1) *Horns or other signaling devices.* The sounding of any horn or signaling device on any automobile or other vehicle on any street or public place of the city, except as a danger warning; the creation by means of any such signaling device of any unreasonably loud or harsh sound; and the sounding of any such device for an unnecessary and unreasonable period of time.

(2) *Animals, birds, etc.* The keeping of any animal or bird which by causing frequent or long-continued noise shall disturb the comfort or repose of any persons in the vicinity.

(3) *Exhausts*. The discharge into the open air of the exhaust of any steam engine, internal combustion engine or motor vehicle except through a muffler or other device which will effectively prevent loud or explosive noises therefrom.

(4) *Defect in vehicle or load or load modification.* The use of any automobile or other vehicle so out of repair, so loaded, so modified, or used in such a manner as to create loud and unnecessary grating, grinding, rattling or other noise.

(5) *Loading and unloading vehicles, opening boxes.* The creation of a loud and excessive noise in connection with loading or unloading any vehicle or the opening and destruction of bales, boxes, crates and containers.

(6) *Construction or repairing of buildings.* The erection (including excavating), demolition, alteration or repair of any building other than daytime hours on weekdays, except in case of an emergency or urgent necessity in the interest of public health and safety, and then only with permission from the City of Manvel Building Inspector, which shall be granted for a period of time not to exceed the period in which the emergency continues.

(7) *Schools, courts, churches, hospitals.* The creation of any excessive noise on any street adjacent to any school, church or court while the same are in use, or adjacent to any hospital, which unlawfully interferes with the workings of such institution or which disturbs or unduly annoys the patients in the hospital, provided conspicuous signs are displayed in such streets indicating that the same is a school, church, hospital or court street.

(8) *Pile drivers, hammers and other machinery.* The operation between the hours of 9:00 p.m. and 7:00 a.m. of any pile driver, steam shovel, pneumatic hammer, derrick or other appliance or machinery, the use of which is attended by loud or unusual noise.

(9) *Vehicular sound amplification systems.* A sound amplifier which is part of or connected to a radio, stereo receiver, compact disc player, cassette tape player or other similar device within a motor vehicle operated at such a volume that it causes material distress, discomfort or injury to persons of ordinary sensibilities in the vicinity thereof. If the sound is audible at a distance of 30 feet from the source or causes a person to be aware of or feel the vibration accompanying the sound at a distance of 30 feet from the source, a prima facie case shall be established that the radio, stereo receiver, compact disc player, cassette player or other similar device is being operated at a volume that causes material distress, discomfort or injury to persons of ordinary sensibilities.

(Ord. No. 2012-O-21, § 2, 8-13-2012)

Sec. 44-164. Defenses.

The following defenses shall apply to any offense established in this article:

(1) The emission of any sound was for the purpose of alerting persons to the existence of an emergency, danger or attempted crime.

(2) The sound was produced by an authorized emergency vehicle.

(3) The sound was produced by emergency work necessary to restore public utilities, or to restore property to a safe condition, or to protect persons or property from imminent danger, following a fire, accident or natural disaster.

(4) The sound was generated:

a. At a lawfully scheduled stadium event;

b. By a parade and spectators and participants on the parade route during a permitted parade;

c. By spectators and participants at lawfully scheduled amphitheater event;

d. By patrons and participants using cannons and gunfire during historical battle reenactments for which a pyrotechnic permit was obtained and the explosives were inspected by the fire marshal;

e. By a pyrotechnic display that was inspected and approved by the fire marshal;

f. By spectators and participants of any outdoor event, fun run, race, festival, fiesta, or concert which was sponsored, cosponsored, or permitted by the city; or

g. By any other otherwise lawful activity that constitutes protected expression pursuant to the First Amendment of the United States Constitution.

(5) The sound was produced by aircraft in flight or in operation at an airport, or railroad equipment in operation on railroad rights-of-way.

(6) The sound was produced by operating or permitting the operation of any mechanically powered saw, drill, sander, router, grinder, lawn or garden tool, lawnmower, or any other similar device used between the hours of 7:00 a.m. and 9:00 p.m. and which device did not produce a sound exceeding 85 dB(A) when measured from the nearest residential property where the sound is being received and was used for the maintenance or upkeep of the property on which it was used.

(7) The sound was generated as authorized under the terms of a permit issued under section 44-166.

(8) The sound was produced by the operation of any air conditioning unit which did not produce a sound exceeding 65 dB(A) when measured at or near 15 feet from the air conditioning unit producing the sound being measured.

(9) The sound was produced by church bells or church chimes when used as part of a religious observance or service during daytime hours and which did not exceed five continuous minutes in duration in any one-hour period.

(Ord. No. 2012-O-21, § 2, 8-13-2012)

Sec. 44-165. Methods of sound measurement.

(a) Whenever portions of this chapter prohibit sound over a certain decibel limit, measurement of said should shall be made with a Type 1 or Type 2 calibrated sound level meter utilizing the A-weighting seals and the slow meter response as specified by the American National Standards Institute (ANSI S1.4-1984/85A).

(b) Noise levels shall be measured in decibels and A-weighted. The unit of measurement shall be designated as dB(A). Meters shall be maintained in calibration and good working order. Calibrations shall be employed which meet ANSI Sl.40-1984 prior to and immediately after every sampling of sound. Measurements recorded shall be taken so as to provide a proper representation of the sound being measured. The microphone of said meter shall be positioned so as not to create any unnatural enhancement or diminution of the measured sound. A windscreen for said microphone shall be used. Measurements shall be taken at or near the nearest property line of the property where the sound is being received.

(Ord. No. 2012-O-21, § 2, 8-13-2012)

Sec. 44-166. Permits.

(a) No person shall use or cause to be used any loudspeaker, loudspeaker system, sound amplifier or any other machine or device which produces, reproduces, or amplifies sound outside of buildings or other enclosed structures in a manner which exceeds the levels specified in this article, when measured from the property where the sound is being received, without first obtaining a permit to do so. Such permit:

(1) May be obtained by making application to the director of the city department so designated by the city manager.

(2) Requires payment of a $10.00 fee for the administrative costs of issuing the permit.

(3) Is valid for one 14-hour period between the hours of 7:00 a.m. and 9:00 p.m.

(4) Shall not be issued for the same location more than twice during any 30-day period.

(5) Shall not authorize, allow, or otherwise permit the production, reproduction, or amplification of sound which exceeds 75 dB(A) when measured from the nearest receiving property.

(b) The use of any loudspeaker, loudspeaker system, sound amplifier or any other similar machine or device which is permitted pursuant to this section is subject to the following regulations:

(1) The only sound permitted shall be either music or human speech or both.

(2) The volume of the sound amplified pursuant to this section shall not exceed 75 dB(A) when measured from the nearest receiving property.

(3) No equipment permitted pursuant to this section shall be operated during the hours between 9:00 p.m. and 7:00 a.m.

(c) The application for the permit required to be filed pursuant to this section shall contain the following information:

(1) The date of the application and the date and hours for which the permit is requested.

(2) The name and address of the applicant.

(3) The name and address of the person who will have charge of the sound amplifying equipment.

(4) The purpose for which the sound equipment will be used.

(5) The address and a description of the location where the sound equipment will be used.

(6) A description of the type of sound amplifying equipment to be used.

(d) If an applicant for a permit under this section is unable to pay the full amount of the permit fee pursuant to subsection (a) of this section, the fee shall be reduced to that amount the applicant is able to pay, provided the applicant submits a sworn affidavit containing the following information:

(1) A statement that the applicant and the group or organization, on whose behalf the applicant is making the application, are unable to pay the full amount of the permit fee.

(2) A statement that the applicant and the group or organization, on whose behalf the applicant is making the application, have made diligent efforts to raise money to pay the permit fee.

(3) A statement of the exact amount the applicant and the group or organization, on whose behalf he is making the application, is able to pay for the permit fee.

(Ord. No. 2012-O-21, § 2, 8-13-2012)

DEVELOPMENT SERVICES DEPARTMENT
20025 HIGHWAY 6
MANVEL, TX 77578
281-489-0630

Planning, Development and Zoning Commission Plat Report

Plat Name	Meridiana Detention Reserve V Phase 2 Final Plat
Applicant	Lacey Bell, EHRA
PD&Z Meeting Date	February 14, 2022
Recommendation	Approval
Submitted By	Kwasi Bosompem, City Planner

Background

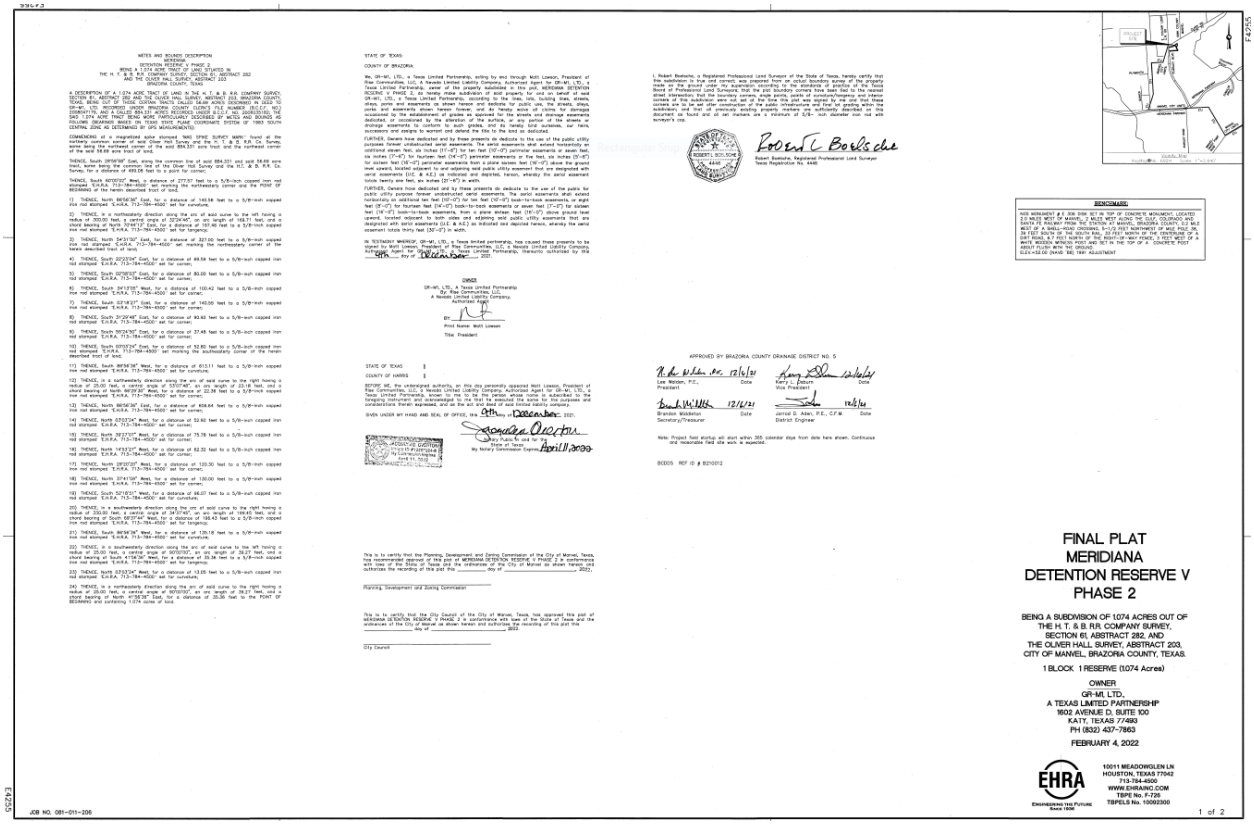
The applicant requested for a 30-day plat extension on January 14, 2022, in order to address comments. Staff did not recommend approval of the plat extension request due to the number of requirements pending for the applicant to remedy. The Planning, Development and Zoning Commission did not approve the 30-day plat extension on January 24, 2022, and the City Council did not approve the plat on February 7, 2022. The applicant resubmitted the plat on February 4, 2022. The resubmittal addressed all the pending requirements.

Staff Recommendation

The City staff recommends approval of the Meridiana Detention Reserve V Phase 2 Final Plat.

Development Services Department
20025 Highway 6
Manvel, TX 77578
281-489-0630

Plat Exhibit



NOTES AND BOUNDS DESCRIPTION
MERIDIANA
DETENTION RESERVE V PHASE 2
BEING A 1.074 ACRE TRACT OF LAND SITUATED IN
THE H. T. & B. R.R. COMPANY SURVEY, SECTION 61, ABSTRACT 282
AND THE OLIVER HALL SURVEY, ABSTRACT 203
BRAZORIA COUNTY, TEXAS

A DESCRIPTION OF A 1.074 ACRE TRACT OF LAND IN THE H. T. & B. R.R. COMPANY SURVEY, SECTION 61, ABSTRACT 282 AND THE OLIVER HALL SURVEY, ABSTRACT 203, BRAZORIA COUNTY, TEXAS, BEING OUT OF THOSE CERTAIN TRACTS CALLED 58.66 ACRES DESCRIBED IN DEED TO GR-ML, LTD., A TEXAS LIMITED PARTNERSHIP, ACCORDING TO THE DEED RECORDED UNDER COUNTY CLERK'S FILE NO. 2020033150, AND A CALLED 604.531 ACRES RECORDED UNDER G.C.F. NO. 2020033150, SAID 1.074 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS, (BEARINGS ARE BASED ON TEXAS STATE PLANE COORDINATE SYSTEM OF 1983 SOUTH CENTRAL ZONE AS DERIVED BY GPS MEASUREMENTS):

COMMENCING at a magnetized nail found marking a 1960 SPRE SURVEY MARK found at the northerly common corner of said Oliver Hall Survey and the H. T. & B. R.R. Co. Survey, same being the northwest corner of the said 604.531 acre tract and the northeast corner of the said 58.66 acre tract of land;

THENCE, South 28°56'39" East, along the common line of said 604.531 and said 58.66 acre tract, same being the common line of the Oliver Hall Survey and the H.T. & B. R.R. Co. Survey, for a distance of 469.08 feet to a point for corner;

THENCE, South 90°00'00" West, a distance of 277.27 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set marking the northeasterly corner and the POINT OF BEGINNING of the herein described tract of land;

1) THENCE, North 89°56'26" East, for a distance of 140.56 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for curvature;

2) THENCE, in a northeasterly direction along the arc of said curve to the left having a radius of 25.00 feet, a central angle of 90°03'34", an arc length of 39.29 feet, and a chord bearing of North 33°54'13" East, for a distance of 157.46 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for tangency;

3) THENCE, North 24°07'30" East, for a distance of 227.92 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set marking the northeasterly corner of the herein described tract of land;

4) THENCE, South 20°23'04" East, for a distance of 69.59 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

5) THENCE, South 20°56'03" East, for a distance of 80.00 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

6) THENCE, South 24°13'55" West, for a distance of 100.42 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

7) THENCE, South 03°18'07" East, for a distance of 140.00 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

8) THENCE, South 21°29'48" East, for a distance of 90.82 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

9) THENCE, South 39°24'50" East, for a distance of 37.48 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

10) THENCE, South 03°07'24" East, for a distance of 52.80 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set marking the southeasterly corner of the herein described tract of land;

11) THENCE, North 89°56'26" West, for a distance of 413.11 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for curvature;

12) THENCE, in a northwesterly direction along the arc of said curve to the right having a radius of 25.00 feet, a central angle of 90°03'34", an arc length of 39.29 feet, and a chord bearing of North 89°58'20" West, for a distance of 35.36 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

13) THENCE, North 89°56'26" East, for a distance of 406.64 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

14) THENCE, North 03°23'34" West, for a distance of 52.62 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

15) THENCE, North 39°27'07" West, for a distance of 75.78 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

16) THENCE, North 19°53'27" West, for a distance of 82.32 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

17) THENCE, North 28°07'30" West, for a distance of 120.30 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

18) THENCE, North 37°41'58" West, for a distance of 130.00 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

19) THENCE, North 52°18'01" West, for a distance of 66.07 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for curvature;

20) THENCE, in a southwesterly direction along the arc of said curve to the right having a radius of 25.00 feet, a central angle of 90°03'34", an arc length of 39.29 feet, and a chord bearing of South 63°37'44" West, for a distance of 158.43 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for tangency;

21) THENCE, North 89°56'26" West, for a distance of 135.19 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for curvature;

22) THENCE, in a northwesterly direction along the arc of said curve to the left having a radius of 25.00 feet, a central angle of 90°00'00", an arc length of 39.27 feet, and a chord bearing of North 44°56'26" West, for a distance of 35.36 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for curvature;

23) THENCE, North 00°03'34" East, for a distance of 13.05 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for curvature;

24) THENCE, in a northeasterly direction along the arc of said curve to the right having a radius of 25.00 feet, a central angle of 90°00'00", an arc length of 39.27 feet, and a chord bearing of North 45°03'34" East, for a distance of 35.36 feet to the POINT OF BEGINNING and containing 1.074 acres of land.

STATE OF TEXAS
COUNTY OF BRAZORIA

We, GR-ML, LTD., a Texas Limited Partnership, acting by and through Matt Lowson, President of Rise Communities, LLC, A Nevada Limited Liability Company, Authorized Agent for GR-ML, LTD., a Texas Limited Partnership, owner of the property subdivided in this plat, MERIDIANA DETENTION RESERVE V PHASE 2 (the "subdivision"), acting by and through Matt Lowson, President of GR-ML, LTD., a Texas Limited Partnership, according to the lines, lots, building lines, streets, alleys, parks and easements as shown hereon and dedicate for public use, the streets, alleys, parks and easements shown hereon forever, and do hereby waive all claims for damages occasioned by the establishment of grades as approved for the streets and drainage easements dedicated, or occasioned by the alteration of the surface portion thereof by reason of such drainage easements to conform to such grades, and do hereby bind ourselves, our heirs, successors and assigns to warrant and defend the title to the land so dedicated.

FURTHER, Owners have dedicated and by these presents do dedicate to the use of the public utility purposes forever unobstructed aerial easements. The aerial easements shall extend horizontally an additional eleven feet, six inches (11'-6") for ten feet (10'-0") perimeter easements or seven feet, six inches (7'-6") for fourteen feet (14'-0") perimeter easements or the feet, six inches (5'-6") for sixteen feet (16'-0") back-to-back easements, from a plane sixteen feet (16'-0") above ground level upward, located adjacent to and adjoining said public utility easement that are designated with aerial easements (U.E. & A.E.) as indicated and depicted, hereon, whereby the aerial easement totals twenty feet, six inches (20'-6") in width.

FURTHER, Owners have dedicated and by these presents do dedicate to the use of the public for public utility purposes forever unobstructed aerial easements. The aerial easements shall extend horizontally an additional ten feet (10'-0") for ten feet (10'-0") back-to-back easements, or eight feet (8'-0") for fourteen feet (14'-0") back-to-back easements or seven feet (7'-0") for sixteen feet (16'-0") back-to-back easements, from a plane sixteen feet (16'-0") above ground level upward, located adjacent to and adjoining said public utility easement that are designated with aerial easements (U.E. & A.E.) as indicated and depicted hereon, whereby the aerial easement totals thirty feet (30'-0") in width.

IN TESTIMONY WHEREOF, GR-ML, LTD., a Texas limited partnership, has caused these presents to be signed by Matt Lowson, President of Rise Communities, LLC, A Nevada Limited Liability Company, Authorized Agent for GR-ML, LTD., a Texas Limited Partnership, thereunto authorized by this 9th day of December 2021.

OWNER
GR-ML, LTD., A Texas Limited Partnership
By: Rise Communities, LLC,
A Nevada Limited Liability Company,
Authorized Agent

By: _____
Print Name: Matt Lowson
Title: President

STATE OF TEXAS §
COUNTY OF HARRIS §

BEFORE ME, the undersigned authority, on this day personally appeared Matt Lowson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR-ML, LTD., a Texas Limited Partnership, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed, and as the act and deed of said limited liability company.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 9th day of December 2021.

Notary Public in and for the State of Texas
My Notary Commission Expires April 11, 2023

This is to certify that the Planning, Development and Zoning Commission of the City of Manvel, Texas, has recommended approval of this plat of MERIDIANA DETENTION RESERVE V PHASE 2 in conformance with laws of the State of Texas and the ordinances of the City of Manvel as shown hereon and authorizes the recording of this plat this _____ day of _____, 2022.

Planning, Development and Zoning Commission

This is to certify that the City Council of the City of Manvel, Texas, has approved this plat of MERIDIANA DETENTION RESERVE V PHASE 2 in conformance with laws of the State of Texas and the ordinances of the City of Manvel as shown hereon and authorizes the recording of this plat this _____ day of _____, 2022.

City Council

I, Robert Boelsche, a Registered Professional Land Surveyor of the State of Texas, hereby certify that this subdivision plat was prepared from an actual and accurate survey of the property made by me or under my supervision on the ground and that the boundary corners, angle points, points of curvature/tangency and interior corners of the subdivision were set as shown hereon, and that the plat boundary corners have been tied to the nearest street intersection, that the boundary corners, angle points, points of curvature/tangency and interior corners of the subdivision were not set at the time this plat was signed by me and that these corners will be set as shown hereon upon completion of construction and development of the subdivision, and that all previously existing property markers are sufficiently described on this document as found and all set markers are a minimum of 5/8"- inch diameter iron rod with surveyor's cap.

ROBERT L. BOELSCHE 4440 REGISTERED PROFESSIONAL LAND SURVEYOR

Robert L Boelsche

Robert Boelsche, Registered Professional Land Surveyor
Texas Registration No. 4440

APPROVED BY BRAZORIA COUNTY DRAINAGE DISTRICT NO. 5

Lee Walden, P.E., President — Date 12/6/21
Kerry L. Osburn, Vice President — Date 12/6/21
Brandon Middleton, Secretary/Treasurer — Date 12/2/21
Jarrod D. Allen, P.E., C.F.M., District Engineer — Date 12/6/21

Note: Project field startup will start within 365 calendar days from date here shown. Continuous and reasonable field site work is expected.

BCDDS REF ID # 821002

BENCHMARK

NGS MONUMENT # X 306 DHU SET IN TOP OF CONCRETE MONUMENT, LOCATED ON THE NORTH SIDE OF FM 1128 (MANVEL ROAD), APPROXIMATELY 0.3 MILES SOUTH TO ROADWAY FROM THE STATION AT MANVEL, BRAZORIA COUNTY, 0.3 MILE WEST OF A SMALL-ROAD CROSSING, 5+1/2 FEET NORTHWEST OF MILE POST 36, 3.7 FEET NORTHEAST OF A POWER POLE, 2.7 FEET SOUTHEAST OF A WIRE FENCE, 0.7 FEET SOUTH OF THE RIGHT-OF-WAY FENCE, 0 FEET WEST OF A WHITE WOODEN WITNESS POST AND SET IN THE TOP OF A CONCRETE POST
ELEVATION = 57.00 (NAVD 88) (1991.35)
0.0-+12.0 DR (NAD 83) (1997.40)=32.6107N/097

FINAL PLAT
MERIDIANA
DETENTION RESERVE V
PHASE 2

BEING A SUBDIVISION OF 1.074 ACRES OUT OF THE H. T. & B. R.R. COMPANY SURVEY, SECTION 61, ABSTRACT 282, AND THE OLIVER HALL SURVEY, ABSTRACT 203, CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

1 BLOCK 1 RESERVE (1.074 Acres)

OWNER
GR-ML LTD.,
A TEXAS LIMITED PARTNERSHIP
1603 AVENUE D, SUITE 100
KATY, TEXAS 77493
PH (832) 437-7863

FEBRUARY 4, 2022

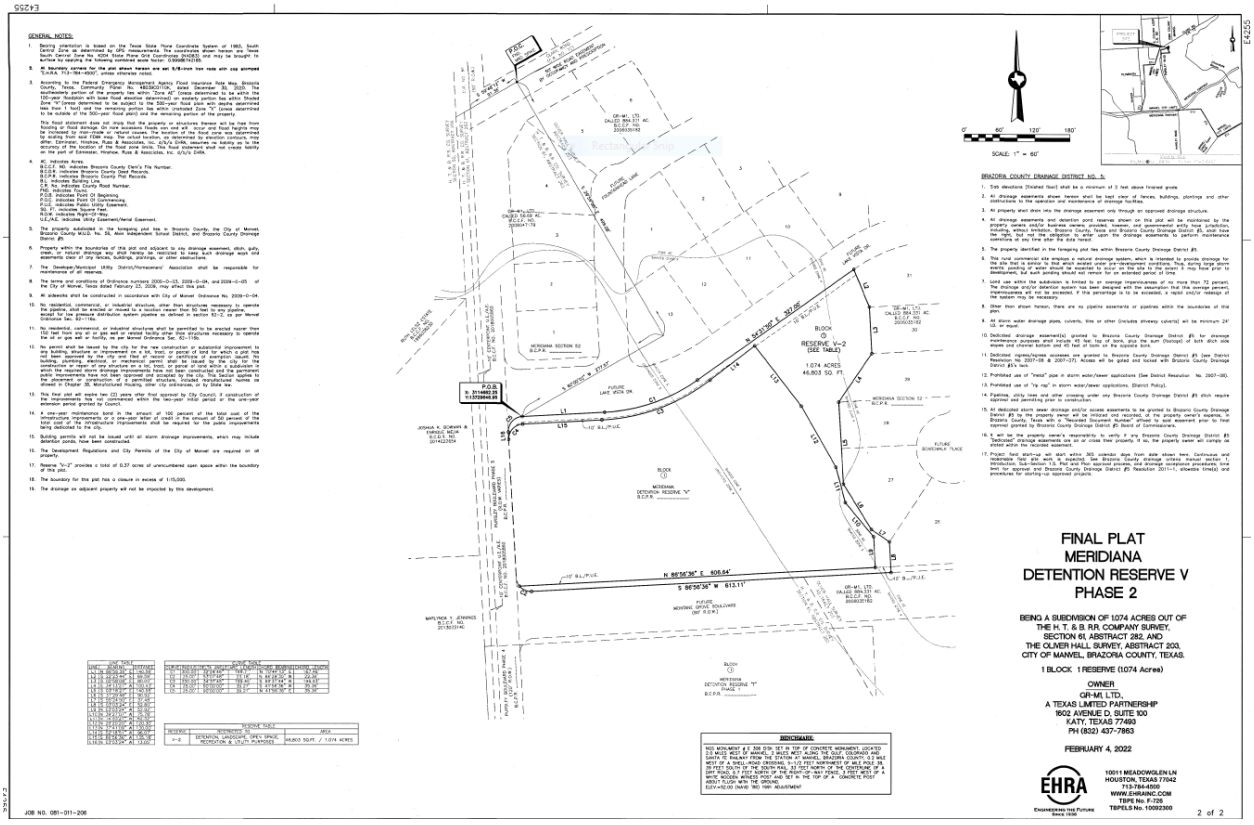
EHRA
ENGINEERING THE FUTURE Since 1936
10011 MEADOWGLEN LN
HOUSTON, TEXAS 77042
713-784-4500
WWW.EHRAINC.COM
TBPE No. F-726
TBPELS No. 10092300

JOB NO. 081-011-206

1 of 2

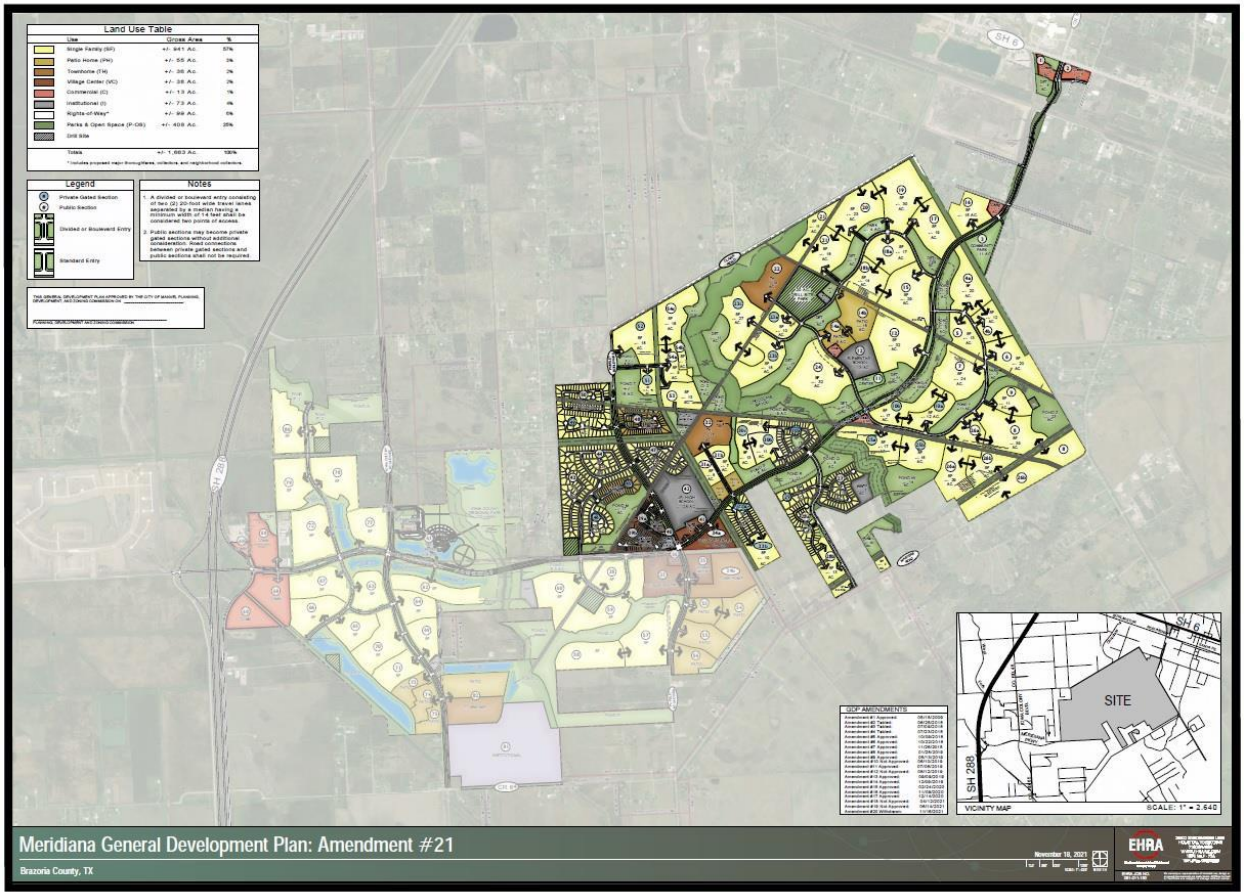
DEVELOPMENT SERVICES DEPARTMENT
20025 HIGHWAY 6
MANVEL, TX 77578
281-489-0630

Plat Exhibit



DEVELOPMENT SERVICES DEPARTMENT
20025 HIGHWAY 6
MANVEL, TX 77578
281-489-0630

Meridiana General Development Plan Amendment No. 21 (dated November 19, 2021)



F4255

METES AND BOUNDS DESCRIPTION
MERIDIANA
DETENTION RESERVE V PHASE 2
BEING A 1.074 ACRE TRACT OF LAND SITUATED IN
THE H. T. & B. R.R. COMPANY SURVEY, SECTION 61, ABSTRACT 282
AND THE OLIVER HALL SURVEY, ABSTRACT 203
BRAZORIA COUNTY, TEXAS

A DESCRIPTION OF A 1.074 ACRE TRACT OF LAND IN THE H. T. & B. R.R. COMPANY SURVEY, SECTION 61, ABSTRACT 282 AND THE OLIVER HALL SURVEY, ABSTRACT 203, BRAZORIA COUNTY, TEXAS, BEING OUT OF THOSE CERTAIN TRACTS CALLED 56.69 ACRES DESCRIBED IN DEED TO GR-M1, LTD. RECORDED UNDER BRAZORIA COUNTY CLERK'S FILE NUMBER (B.C.C.F. NO.) 2008047179, AND A CALLED 884.331 ACRES RECORDED UNDER B.C.C.F. NO. 2006035182; THE SAID 1.074 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS (BEARINGS BASED ON TEXAS STATE PLANE COORDINATE SYSTEM OF 1983 SOUTH CENTRAL ZONE AS DETERMINED BY GPS MEASUREMENTS):

COMMENCING at a magnetized spike stamped "MAG SPIKE SURVEY MARK" found at the northerly common corner of said Oliver Hall Survey and the H. T. & B. R.R. Co. Survey, same being the northwest corner of the said 884.331 acre tract and the northeast corner of the said 56.69 acre tract of land;

THENCE, South 29°59'58" East, along the common line of said 884.331 and said 56.69 acre tract, same being the common line of the Oliver Hall Survey and the H.T. & B. R.R. Co. Survey, for a distance of 499.08 feet to a point for corner;

THENCE, South 60°00'02" West, a distance of 277.57 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set marking the northwesterly corner and the POINT OF BEGINNING of the herein described tract of land;

1) THENCE, North 86°56'36" East, for a distance of 140.56 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for curvature;

2) THENCE, in a northeasterly direction along the arc of said curve to the left having a radius of 300.00 feet, a central angle of 32°24'46", an arc length of 169.71 feet, and a chord bearing of North 70°44'13" East, for a distance of 167.46 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for tangency;

3) THENCE, North 54°31'50" East, for a distance of 327.00 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set marking the northeasterly corner of the herein described tract of land;

4) THENCE, South 22°23'04" East, for a distance of 69.59 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

5) THENCE, South 02°58'03" East, for a distance of 80.00 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

6) THENCE, South 34°13'05" West, for a distance of 100.42 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

7) THENCE, South 03°18'27" East, for a distance of 140.55 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

8) THENCE, South 31°29'48" East, for a distance of 90.92 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

9) THENCE, South 55°24'50" East, for a distance of 37.48 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

10) THENCE, South 03°03'24" East, for a distance of 52.80 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set marking the southeasterly corner of the herein described tract of land;

11) THENCE, South 86°56'36" West, for a distance of 613.11 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for curvature;

12) THENCE, in a northwesterly direction along the arc of said curve to the right having a radius of 25.00 feet, a central angle of 53°07'48", an arc length of 23.18 feet, and a chord bearing of North 66°29'30" West, for a distance of 22.36 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

13) THENCE, North 86°56'36" East, for a distance of 606.64 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

14) THENCE, North 03°03'24" West, for a distance of 52.92 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

15) THENCE, North 39°27'07" West, for a distance of 75.78 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

16) THENCE, North 14°53'27" West, for a distance of 62.32 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

17) THENCE, North 29°20'20" West, for a distance of 120.30 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

18) THENCE, North 37°41'09" West, for a distance of 130.00 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for corner;

19) THENCE, South 52°18'51" West, for a distance of 96.07 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for curvature;

20) THENCE, in a southwesterly direction along the arc of said curve to the right having a radius of 330.00 feet, a central angle of 34°37'45", an arc length of 199.45 feet, and a chord bearing of South 69°37'44" West, for a distance of 196.43 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for tangency;

21) THENCE, South 86°56'36" West, for a distance of 135.18 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for curvature;

22) THENCE, in a southwesterly direction along the arc of said curve to the left having a radius of 25.00 feet, a central angle of 90°00'00", an arc length of 39.27 feet, and a chord bearing of South 41°56'36" West, for a distance of 35.36 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for tangency;

23) THENCE, North 03°03'24" West, for a distance of 13.05 feet to a 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500" set for curvature;

24) THENCE, in a northeasterly direction along the arc of said curve to the right having a radius of 25.00 feet, a central angle of 90°00'00", an arc length of 39.27 feet, and a chord bearing of North 41°56'36" East, for a distance of 35.36 feet to the POINT OF BEGINNING and containing 1.074 acres of land.

STATE OF TEXAS:

COUNTY OF BRAZORIA:

We, GR-M1, LTD., a Texas Limited Partnership, acting by and through Matt Lawson, President of Rise Communities, LLC, A Nevada Limited Liability Company, Authorized Agent for GR-M1, LTD., a Texas Limited Partnership, owner of the property subdivided in this plat, MERIDIANA DETENTION RESERVE V PHASE 2, do hereby make subdivision of said property for and on behalf of said GR-M1, LTD., a Texas Limited Partnership, according to the lines, lots, building lines, streets, alleys, parks and easements as shown hereon and dedicate for public use, the streets, alleys, parks and easements shown hereon forever, and do hereby waive all claims for damages occasioned by the establishment of grades as approved for the streets and drainage easements dedicated, or occasioned by the alteration of the surface, or any portion of the streets or drainage easements to conform to such grades, and do hereby bind ourselves, our heirs, successors and assigns to warrant and defend the title to the land so dedicated.

FURTHER, Owners have dedicated and by these presents do dedicate to the use of the public utility purposes forever unobstructed aerial easements. The aerial easements shall extend horizontally an additional eleven feet, six inches (11'-6") for ten feet (10'-0") perimeter easements or seven feet, six inches (7'-6") for fourteen feet (14'-0") perimeter easements or five feet, six inches (5'-6") for sixteen feet (16'-0") perimeter easements from a plane sixteen feet (16'-0") above the ground level upward, located adjacent to and adjoining said public utility easement that are designated with aerial easements (U.E. & A.E.) as indicated and depicted, hereon, whereby the aerial easement totals twenty one feet, six inches (21'-6") in width.

FURTHER, Owners have dedicated and by these presents do dedicate to the use of the public for public utility purpose forever unobstructed aerial easements. The aerial easements shall extend horizontally an additional ten feet (10'-0") for ten feet (10'-0") back-to-back easements, or eight feet (8'-0") for fourteen feet (14'-0") back-to-back easements or seven feet (7'-0") for sixteen feet (16'-0") back-to-back easements, from a plane sixteen feet (16'-0") above ground level upward, located adjacent to both sides and adjoining said public utility easements that are designated with aerial easements (U.E. & A.E.) as indicated and depicted hereon, whereby the aerial easement totals thirty feet (30'-0") in width.

IN TESTIMONY WHEREOF, GR-M1, LTD., a Texas limited partnership, has caused these presents to be signed by Matt Lawson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR-M1, LTD., a Texas Limited Partnership, thereunto authorized by this 9th day of December 2021.

OWNER

GR-M1, LTD., A Texas Limited Partnership
By: Rise Communities, LLC,
A Nevada Limited Liability Company,
Authorized Agent

BY: _____

Print Name: Matt Lawson

Title: President

STATE OF TEXAS §

COUNTY OF HARRIS §

BEFORE ME, the undersigned authority, on this day personally appeared Matt Lawson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR-M1, LTD., a Texas Limited Partnership, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and considerations therein expressed, and as the act and deed of said limited liability company.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 9th day of December 2021.

JACQUELYN D. OVERTON
Notary ID #1203*204-8
My Commission Expires
April 11, 2022

Notary Public in and for the
State of Texas
My Notary Commission Expires April 11, 2022

This is to certify that the Planning, Development and Zoning Commission of the City of Manvel, Texas, has recommended approval of this plat of MERIDIANA DETENTION RESERVE V PHASE 2 in conformance with laws of the State of Texas and the ordinances of the City of Manvel as shown hereon and authorizes the recording of this plat this _____ day of _____, 2022.

Planning, Development and Zoning Commission

This is to certify that the City Council of the City of Manvel, Texas, has approved this plat of MERIDIANA DETENTION RESERVE V PHASE 2 in conformance with laws of the State of Texas and the ordinances of the City of Manvel as shown hereon and authorizes the recording of this plat this _____ day of _____, 2022.

City Council

I, Robert Boelsche, a Registered Professional Land Surveyor of the State of Texas, hereby certify that this subdivision is true and correct; was prepared from an actual boundary survey of the property made on the ground under my supervision according to the standards of practice of the Texas Board of Professional Land Surveyors; that the plat boundary corners have been tied to the nearest street intersection; that the boundary corners, angle points, points of curvature/tangency and interior corners of this subdivision were not set at the time this plat was signed by me and that these corners are to be set after construction of the public infrastructure and final lot grading within the subdivision; and that all previously existing property markers are sufficiently described on this document as found and all set markers are a minimum of 5/8- inch diameter iron rod with surveyor's cap.

STATE OF TEXAS
REGISTERED
ROBERT L BOELSCHE
4446
PROFESSIONAL
LAND SURVEYOR

Robert L Boelsche

Robert Boelsche, Registered Professional Land Surveyor
Texas Registration No. 4446

APPROVED BY BRAZORIA COUNTY DRAINAGE DISTRICT NO. 5

N. Lee Walden, P.E. 12/6/21
Lee Walden, P.E., Date
President

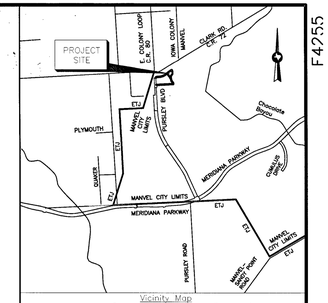
Kerry L. Osburn 12/6/21
Kerry L. Osburn Date
Vice President

Brandon M. Middleton 12/6/21
Brandon Middleton Date
Secretary/Treasurer

Jarrod D. Aden 12/6/21
Jarrod D. Aden, P.E., C.F.M. Date
District Engineer

Note: Project field startup will start within 365 calendar days from date here shown. Continuous and reasonable field site work is expected.

BCDD5 REF ID # B210012



Vicinity Map
KeyMap® No. 692H Scale: 1"=2,640'

BENCHMARK:

NGS MONUMENT # E 306 DISK SET IN TOP OF CONCRETE MONUMENT, LOCATED 2.0 MILES WEST OF MANVEL, 2 MILES WEST ALONG THE GULF, COLORADO AND SANTA FE RAILWAY FROM THE STATION AT MANVEL, BRAZORIA COUNTY, 0.2 MILE WEST OF A SHELL-ROAD CROSSING, 5-1/2 FEET NORTHWEST OF MILE POLE 38, 39 FEET SOUTH OF THE SOUTH RAIL, 33 FEET NORTH OF THE CENTERLINE OF A DIRT ROAD, 6.7 FEET NORTH OF THE RIGHT-OF-WAY FENCE, 3 FEET WEST OF A WHITE WOODEN WITNESS POST AND SET IN THE TOP OF A CONCRETE POST ABOUT FLUSH WITH THE GROUND.
ELEV.=52.00 (NAVD '88) 1991 ADJUSTMENT

FINAL PLAT
MERIDIANA
DETENTION RESERVE V
PHASE 2

BEING A SUBDIVISION OF 1.074 ACRES OUT OF
THE H. T. & B. R.R. COMPANY SURVEY,
SECTION 61, ABSTRACT 282, AND
THE OLIVER HALL SURVEY, ABSTRACT 203,
CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

1 BLOCK 1 RESERVE (1.074 Acres)

OWNER
GR-M1, LTD.,
A TEXAS LIMITED PARTNERSHIP
1602 AVENUE D, SUITE 100
KATY, TEXAS 77493
PH (832) 437-7863

FEBRUARY 4, 2022

EHRA
ENGINEERING THE FUTURE
SINCE 1936

10011 MEADOWGLEN LN
HOUSTON, TEXAS 77042
713-784-4500
WWW.EHRAINC.COM
TBPE No. F-726
TBPELS No. 10092300

JOB NO. 081-011-206

PATH:R:\2008\081-011-206\DRAWING\PLAT\081011206V-FP01-DET-V PH2 BY:SVJ DATE:2021-10-05

E4255

GENERAL NOTES:

1. Bearing orientation is based on the Texas State Plane Coordinate System of 1983, South Central Zone as determined by GPS measurements. The coordinates shown hereon are Texas South Central Zone No. 4204 State Plane Grid Coordinates (NAD83) and may be brought to surface by applying the following combined scale factor: 0.99986742185.

2. **All boundary corners for the plat shown hereon are set 5/8-inch iron rods with cap stamped "E.H.R.A. 713-784-4500", unless otherwise noted.**

3. According to the Federal Emergency Management Agency Flood Insurance Rate Map, Brazoria County, Texas, Community Panel No. 48039C0110K, dated December 30, 2020. The southeasterly portion of the property lies within "Zone AE" (areas determined to be within the 100-year floodplain with base flood elevation determined) an easterly portion lies within Shaded Zone "X" (areas determined to be subject to the 500-year flood plain with depths determined less than 1 foot) and the remaining portion lies within Unshaded Zone "X" (areas determined to be outside of the 500-year flood plain) and the remaining portion of the property.

   This flood statement does not imply that the property or structures thereon will be free from flooding or flood damage. On rare occasions floods can and will occur and flood heights may be increased by man-made or natural causes. The location of the flood zone was determined by scaling from said FEMA map. The actual location, as determined by elevation contours, may differ. Edminster, Hinshaw, Russ & Associates, Inc. d/b/a EHRA, assumes no liability as to the accuracy of the location of the flood zone limits. This flood statement shall not create liability on the part of Edminster, Hinshaw, Russ & Associates, Inc. d/b/a EHRA.

4. AC. indicates Acres.
   B.C.C.F. NO. indicates Brazoria County Clerk's File Number.
   B.C.D.R. indicates Brazoria County Deed Records.
   B.C.P.R. indicates Brazoria County Plat Records.
   B.L. indicates Building Line.
   C.R. No. indicates County Road Number.
   FND. indicates Found.
   P.O.B. indicates Point Of Beginning.
   P.O.C. indicates Point Of Commencing.
   P.U.E. indicates Public Utility Easement.
   SQ. FT. indicates Square Feet.
   R.O.W. indicates Right-Of-Way.
   U.E./A.E. indicates Utility Easement/Aerial Easement.

5. The property subdivided in the foregoing plat lies in Brazoria County, the City of Manvel, Brazoria County M.U.D. No. 55, Alvin Independent School District, and Brazoria County Drainage District #5.

6. Property within the boundaries of this plat and adjacent to any drainage easement, ditch, gully, creek, or natural drainage way shall hereby be restricted to keep such drainage ways and easements clear of any fences, buildings, plantings, or other obstructions.

7. The Developer/Municipal Utility District/Homeowners' Association shall be responsible for maintenance of all reserves.

8. The terms and conditions of Ordinance numbers 2009-O-03, 2009-O-04, and 2009-O-05 of the City of Manvel, Texas dated February 23, 2009, may affect this plat.

9. All sidewalks shall be constructed in accordance with City of Manvel Ordinance No. 2009-O-04.

10. No residential, commercial, or industrial structure, other than structures necessary to operate the pipeline, shall be erected or moved to a location nearer than 50 feet to any pipeline, except for low pressure distribution system pipeline as defined in section 62-2, as per Manvel Ordinance Sec. 62-116a.

11. No residential, commercial, or industrial structures shall be permitted to be erected nearer than 150 feet from any oil or gas well or related facility other than structures necessary to operate the oil or gas well or facility, as per Manvel Ordinance Sec. 62-116b.

12. No permit shall be issued by the city for the new construction or substantial improvement to any building, structure or improvement on a lot, tract, or parcel of land for which a plat has not been approved by the city and filed of record or certificate of exemption issued. No building, plumbing, electrical, or mechanical permit shall be issued by the city for the construction or repair of any structure on a lot, tract, or parcel of land within a subdivision in which the required storm drainage improvements have not been constructed and the permanent public improvements have not been approved and accepted by the city. This Section applies to the placement or construction of a permitted structure, included manufactured homes as allowed in Chapter 38, Manufactured Housing, other city ordinances, or by State law.

13. This final plat will expire two (2) years after final approval by City Council, if construction of the improvements has not commenced within the two-year initial period or the one-year extension period granted by Council.

14. A one-year maintenance bond in the amount of 100 percent of the total cost of the infrastructure improvements or a one-year letter of credit in the amount of 50 percent of the total cost of the infrastructure improvements shall be required for the public improvements being dedicated to the city.

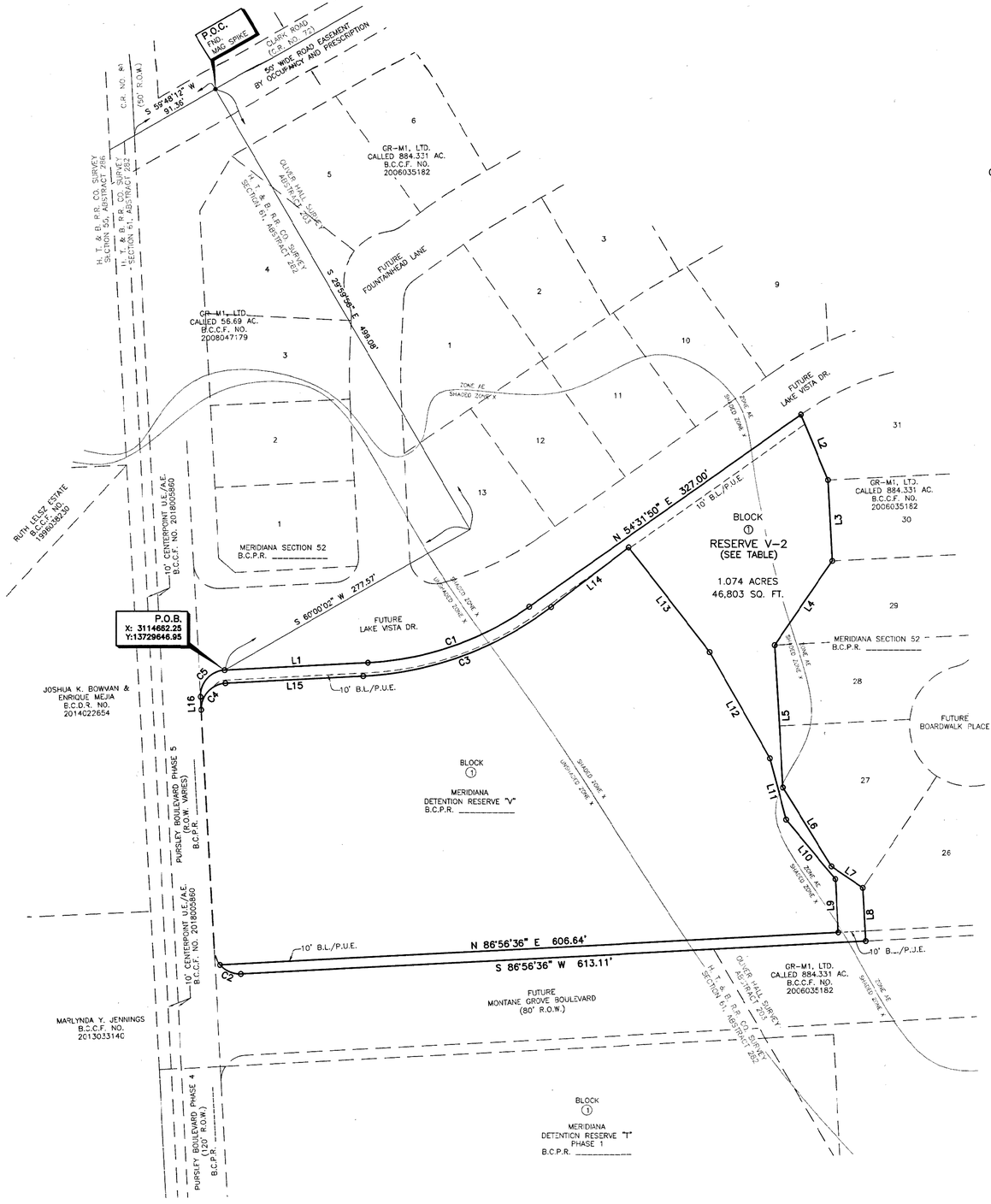
15. Building permits will not be issued until all storm drainage improvements, which may include detention ponds, have been constructed.

16. The Development Regulations and City Permits of the City of Manvel are required on all property.

17. Reserve "V-2" provides a total of 0.37 acres of unencumbered open space within the boundary of this plat.

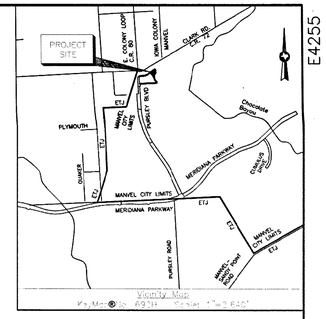
18. The boundary for this plat has a closure in excess of 1:15,000.

19. The drainage on adjacent property will not be impacted by this development.



0' 60' 120' 180'

SCALE: 1" = 60'



BRAZORIA COUNTY DRAINAGE DISTRICT NO. 5:

1. Slab elevations (finished floor) shall be a minimum of 2 feet above finished grade.
2. All drainage easements shown hereon shall be kept clear of fences, buildings, plantings and other obstructions to the operation and maintenance of drainage facilities.
3. All property shall drain into the drainage easement only through an approved drainage structure.
4. All drainage easements and detention pond reserves shown on this plat will be maintained by the property owners and/or business owners; provided, however, and governmental entity have jurisdiction, including, without limitation, Brazoria County, Texas and Brazoria County Drainage District #5, shall have the right, but not the obligation to enter upon the drainage easements to perform maintenance operations at any time after the date hereof.
5. The property identified in the foregoing plat lies within Brazoria County Drainage District #5.
6. This rural commercial site employs a natural drainage system, which is intended to provide drainage for the site that is similar to that which existed under pre-development conditions. Thus, during large storm events, ponding of water should be expected to occur on the site to the extent it may have prior to development, but such ponding should not remain for an extended period of time.
7. Land use within the subdivision is limited to an average imperviousness of no more than 72 percent. The drainage and/or detention system has been designed with the assumption that this average percent, imperviousness will not be exceeded. If this percentage is to be exceeded, a replat and/or redesign of the system may be necessary.
8. Other than shown hereon, there are no pipeline easements or pipelines within the boundaries of this plan.
9. All storm water drainage pipes, culverts, tiles or other (includes driveway culverts) will be minimum 24" I.D. or equal.
10. Dedicated drainage easement(s) granted to Brazoria County Drainage District #5 for drainage maintenance purposes shall include 45 feet top of bank, plus the sum (footage) of both ditch side slopes and channel bottom and 45 feet of bank on the opposite bank.
11. Dedicated ingress/egress accesses are granted to Brazoria County Drainage District #5 (see District Resolution No 2007-06 & 2007-07). Access will be gated and locked with Brazoria County Drainage District #5's lock.
12. Prohibited use of "metal" pipe in storm water/sewer applications (See District Resolution No. 2007-08).
13. Prohibited use of "rip rap" in storm water/sewer applications. (District Policy).
14. Pipelines, utility lines and other crossing under any Brazoria County Drainage District #5 ditch require approval and permitting prior to construction.
15. All dedicated storm sewer drainage and/or access easements to be granted to Brazoria County Drainage District #5 by the property owner will be initiated and recorded, at the property owner's expense, in Brazoria County, Texas with a "Recorded Document Number" affixed to said easement prior to final approval granted by Brazoria County Drainage District #5 Board of Commissioners.
16. It will be the property owner's responsibility to verify if any Brazoria County Drainage District #5 "Dedicated" drainage easements are on or cross their property. If so, the property owner will comply as stated within the recorded easement.
17. Project field start-up will start within 365 calendar days from date shown here. Continuous and reasonable field site work is expected. See Brazoria County drainage criteria manual section 1, Introduction; Sub-Section 1.5, Plat and Plan approval process, and drainage acceptance procedures; time limit for approval and Brazoria County Drainage District #5 Resolution 2011-1, allowable time(s) and procedures for starting-up approved projects.

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 86°56'36" E	140.56'
L2	S 22°23'44" E	69.59'
L3	S 02°58'08" E	80.00'
L4	S 34°13'27" W	100.43'
L5	S 63°18'27" E	140.55'
L6	S 31°29'48" E	90.92'
L7	S 55°24'50" E	37.48'
L8	S 03°03'24" E	52.80'
L9	N 03°03'24" W	52.92'
L10	N 39°27'07" W	75.78'
L11	N 14°53'27" W	62.32'
L12	N 29°20'20" W	120.30'
L13	N 37°41'09" W	130.00'
L14	S 52°18'51" W	96.07'
L15	S 86°56'36" W	135.18'
L16	N 03°03'24" W	13.05'

CURVE TABLE					
CURVE	RADIUS	DELTA ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	300.00'	32°24'48"	169.71'	N 70°44'13" E	167.46'
C2	25.00'	53°07'48"	23.18'	N 66°29'30" W	22.36'
C3	330.00'	34°37'45"	199.45'	S 69°37'44" W	196.43'
C4	25.00'	90°00'00"	39.27'	S 41°56'36" W	35.36'
C5	25.00'	90°00'00"	39.27'	N 41°56'36" E	35.36'

RESERVE TABLE		
RESERVE	RESTRICTED TO	AREA
V-2	DETENTION, LANDSCAPE, OPEN SPACE, RECREATION & UTILITY PURPOSES	46,803 SQ.FT. / 1.074 ACRES

BENCHMARK:

NGS MONUMENT # E 306 DISK SET IN TOP OF CONCRETE MONUMENT, LOCATED 2.0 MILES WEST OF MANVEL, 2 MILES WEST ALONG THE GULF, COLORADO AND SANTA FE RAILWAY FROM THE STATION AT MANVEL, BRAZORIA COUNTY, 0.2 MILE WEST OF A SHELL-ROAD CROSSING, 5-1/2 FEET NORTHWEST OF MILE POLE 38, 39 FEET SOUTH OF THE SOUTH RAIL, 33 FEET NORTH OF THE CENTERLINE OF A DIRT ROAD, 6.7 FEET NORTH OF THE RIGHT-OF-WAY FENCE, 3 FEET WEST OF A WHITE WOODEN WITNESS POST AND SET IN THE TOP OF A CONCRETE POST ABOUT FLUSH WITH THE GROUND.
ELEV.=52.00 (NAVD '88) 1991 ADJUSTMENT

FINAL PLAT
MERIDIANA
DETENTION RESERVE V
PHASE 2

BEING A SUBDIVISION OF 1.074 ACRES OUT OF THE H. T. & B. R.R. COMPANY SURVEY, SECTION 61, ABSTRACT 282, AND THE OLIVER HALL SURVEY, ABSTRACT 203, CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

1 BLOCK 1 RESERVE (1.074 Acres)

OWNER
GR-M1, LTD.,
A TEXAS LIMITED PARTNERSHIP
1602 AVENUE D, SUITE 100
KATY, TEXAS 77493
PH (832) 437-7863

FEBRUARY 4, 2022

EHRA
ENGINEERING THE FUTURE SINCE 1936
10011 MEADOWGLEN LN
HOUSTON, TEXAS 77042
713-784-4500
WWW.EHRAINC.COM
TBPE No. F-726
TBPELS No. 10092300

JOB NO. 081-011-206

PATH:R:\2008\081-011-206\DRAWING\PLAT\081011206V-FP01-DET-V PH2 BY:SVJ DATE:2021-10-05

E4255

Land Use Table

Use	Gross Area	%
Single Family (SF)	+/- 941 Ac.	57%
Patio Home (PH)	+/- 55 Ac.	3%
Townhome (TH)	+/- 36 Ac.	2%
Village Center (VC)	+/- 38 Ac.	2%
Commercial (C)	+/- 13 Ac.	1%
Institutional (I)	+/- 73 Ac.	4%
Rights-of-Way*	+/- 99 Ac.	6%
Parks & Open Space (P-OS)	+/- 408 Ac.	25%
Drill Site		
Totals	+/- 1,663 Ac.	100%

* Includes proposed major thoroughfares, collectors, and neighborhood collectors.

Legend

- (#) Private Gated Section
- (#) Public Section
- Divided or Boulevard Entry (See Note 1)
- Standard Entry (See Note 2)

Notes

1. A divided or boulevard entry consisting of two (2) 20-foot wide travel lanes separated by a median having a minimum width of 14 feet shall be considered two points of access.
2. A standard entry is the right-of-way width determined by Table 2 (Page 17) or as otherwise stated in the adopted O-PUD document.
3. Public sections may become private gated sections without additional consideration. Road connections between private gated sections and public sections shall not be required. This note shall not apply to Section 20 and Section 26 as identified on this document.
4. The Clark Road ingress/egress from Section 20 and S Masters Road ingress/egress from Section 26B shall maintain a minimum public right-of-way width of 60-feet with no parking.

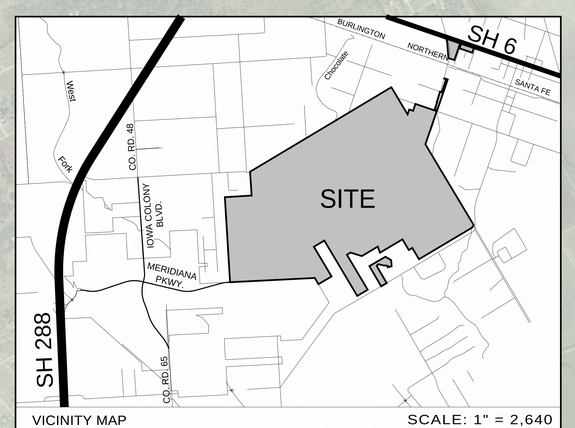
THIS GENERAL DEVELOPMENT PLAN APPROVED BY THE CITY OF MANVEL PLANNING, DEVELOPMENT, AND ZONING COMMISSION ON _____.

_____
PLANNING, DEVELOPMENT AND ZONING COMMISSION

SH 6
SH 288
CR 64
Kruger Road
Jordan Road
CLARK ROAD
MASTERS ROAD
MERIDIANA PARKWAY
CHOCOLATE BAYOU
IOWA COLONY CITY LIMIT
IOWA COLONY REGIONAL PARK 102.1 AC.
ELEMENTARY SCHOOL 15 AC.
REC. CENTER 4.6 AC.
JR. HIGH SCHOOL 28 AC.
ELEMENTARY SCHOOL 13 AC.
20 AC. DRILL SITE/ PARK
VILLAGE CENTER 10 AC.
INSTITUTIONAL
TOWNHOME
TH
PATIO
COMM.
PARK
DET.
LIFT STATION
WWTP
POND A
POND B
POND C
POND D
POND E
POND F-1
POND F-2
POND G
POND H
POND I
POND J
POND K
POND L 8.0 AC.
POND M 17 AC.
POND N
POND O
POND P
POND Q 8 AC.
POND R 11 AC.
POND T +/- 15 AC.
POND V +/- 4 AC.
POND W 14 AC.
POND X 13 AC.
POND Y 11 AC.
POND Z 23 AC.
POND N-2 +/- 4 AC.
POND O-2 +/- 5 AC.
POND C-2 5 AC.
POND D-2 8 AC.
POND #9 9 AC.
POND S 6 AC.
MUD NO. 54 WATER PLANT +/- 2 AC.
MUD NO. 54 WATER PLANT +/- 1 AC.
SF
COMM
PATIO
TOWNHOME
INSTITUTIONAL

GDP AMENDMENTS

Amendment #1 Approved:	05/18/2009
Amendment #2 Tabled:	06/25/2018
Amendment #3 Tabled:	07/09/2018
Amendment #4 Tabled:	07/23/2018
Amendment #5 Approved:	10/09/2018
Amendment #6 Approved:	10/22/2018
Amendment #7 Approved:	11/26/2018
Amendment #8 Approved:	01/28/2019
Amendment #9 Approved:	05/13/2019
Amendment #10 Not Approved:	06/10/2019
Amendment #11 Approved:	07/08/2019
Amendment #12 Not Approved:	08/12/2019
Amendment #13 Approved:	09/09/2019
Amendment #14 Approved:	12/09/2019
Amendment #15 Approved:	02/24/2020
Amendment #16 Approved:	11/09/2020
Amendment #17 Approved:	12/14/2020
Amendment #18 Not Approved:	04/12/2021
Amendment #19 Not Approved:	06/14/2021
Amendment #20 Withdrawn:	11/16/2021



VICINITY MAP SCALE: 1" = 2,640

Meridiana General Development Plan: Amendment #21

Brazoria County, TX

November 19, 2021

150' 300' 600' 1200'
SCALE: 1"=600' NORTH

EHRA
ENGINEERING THE FUTURE SINCE 1936
10011 MEADOWGLEN LANE
HOUSTON, TEXAS 77042
713.784.4500
WWW.EHRAINC.COM
TBPE No. F- 726
TBPLS No. 10092300

EHRA JOB NO. 081-011-150

No warranty or representation of intended use, design or proposed improvements are made herein. All Plans for land or facilities are subject to change without notice.

City of Manvel

P. O. Box 187
20025 HWY 6
Manvel, Texas 77578

(281) 489-0630
Fax (281) 489-0634

AGENDA REQUEST

REQUEST MUST BE MADE ACCORDING TO THE SUBMITTAL SCHEDULE

Meeting Requested: (Please check applicable meeting)

Planning, Development & Zoning			City Council			Both	☒

Date of Request: February 14, 2022 & February 22, 2022

YOUR REQUEST WILL BE PLACED ON THE NEXT AVAILABLE MEETING DATE. MEETINGS ARE SECOND AND FOURTH MONDAYS FOR PLANNING, DEVELOPMENT & ZONING AND FIRST AND THIRD MONDAYS FOR CITY COUNCIL. THE AGENDAS ARE POSTED TO THE GENERAL PUBLIC AT MANVEL CITY HALL AND ON OUR WEBSITE AT www.cityofmanvel.com. THE AGENDA IS POSTED AND WILL REMAIN POSTED CONTINOUSLY FOR AT LEAST 72 HOURS PRECEDING THE SCHEDULED TIME OF THE MEETING. PLEASE CHECK THE BOARD FOR YOUR MEETING SCHEDULE. WE STRONGLY ENCOURAGE YOU TO ATTEND THE MEETING FOR QUESTIONS AND ANSWERS. IF YOU ARE UNABLE TO ATTEND ACTION MAY BE TABLED UNTIL THE FOLLOWING MEETING.

Person to Speak: Jared Bowlin or Brad Sweitzer

Daytime Phone: 713-784-4500 Fax Number: 713-784-4577

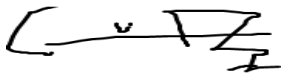
E-mail Address: Ibell@ehrainc.com jbowlin@ehrainc.com or bsweitzer@ehra.com

Description of Request and Physical Address:

Consideration and possible action to forward with recommendation to City Council, Final Plat for Meridiana Detention Reserve V Phase 2, being a subdivision of 1.074 acres out of the H.T. & B.R.R. Company Survey, Section 61, Abstract 282, and the Oliver Hall Survey, Abstract 203, City of Manvel, Brazoria County, Texas.

Plats:
Preliminary_____
Final X

ALL DOCUMENTATION AND FEES ASSOCIATED WITH THIS AGENDA REQUEST MUST BE SUBMITTED ACCORDING TO THE MEETING SUBMITTAL SCHEDULE WHICH CAN BE FOUND ON OUR WEBSITE.
BY SIGNING THIS AGENDA REQUEST FORM, I ACKNOWLEDGE THAT I HAVE READ AND UNDERSTAND THIS AGENDA REQUEST FORM.



February 9, 2022

SIGNATURE DATE

F4261

STATE OF TEXAS §

COUNTY OF BRAZORIA §

We, GR–M1, LTD., a Texas Limited Partnership, acting by and through Matt Lawson, President of Rise Communities, LLC, A Nevada Limited Liability Company, Authorized Agent for GR–M1, LTD., a Texas Limited Partnership, owner of the property subdivided in this plat, MERIDIANA ELEMENTARY SCHOOL SITE NO 2, do hereby make subdivision of said property for and on behalf of said GR–M1, LTD., a Texas Limited Partnership, according to the lines, lots, building lines, streets, alleys, parks and easements as shown hereon and dedicate for public use, the streets, alleys, parks and easements shown hereon forever, and do hereby waive all claims for damages occasioned by the establishment of grades as approved for the streets and drainage easements dedicated, or occasioned by the alteration of the surface, or any portion of the streets or drainage easements to conform to such grades, and do hereby bind ourselves, our heirs, successors and assigns to warrant and defend the title to the land so dedicated.

FURTHER, we do hereby certify that we are the owners of all property immediately adjacent to and adjoining the boundaries of the above and foregoing subdivision of MERIDIANA ELEMENTARY SCHOOL SITE NO 2 where public utility easements are to be established outside the boundaries of the above and foregoing subdivision and do hereby make and establish and dedicate to the use of the public utilities forever all public utility easements shown in said adjacent acreage.

IN TESTIMONY WHEREOF, GR–M1, LTD., a Texas Limited Partnership, has caused these presents to be signed by Matt Lawson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR–M1, LTD., a Texas Limited Partnership, thereunto authorized by this 4th day of November, 2021.

OWNER

GR–M1, LTD., a Texas Limited Partnership
By: Rise Communities, LLC,
a Nevada Limited Liability Company,
its Authorized Agent

BY: _____

Print Name: Matt Lawson

Title: President

STATE OF TEXAS §

COUNTY OF HARRIS §

BEFORE ME, the undersigned authority, on this day personally appeared Matt Lawson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR–M1, LTD., a Texas Limited Partnership, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and considerations therein expressed, and as the act and deed of said limited liability company.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 4th day of November 2021.

Jacquelyn Overton
Notary Public in and for the
State of Texas
My Notary Commission Expires April 11, 2022

JACQULYN D. OVERTON
Notary ID #:2807204-8
My Commission Expires
April 11, 2022

I, Robert Boelsche, a Registered Professional Land Surveyor of the State of Texas, hereby certify that this subdivision is true and correct; was prepared from an actual boundary survey of the property made on the ground under my supervision according to the standards of practice of the Texas Board of Professional Land Surveyors; that the plat boundary corners have been tied to the nearest street intersection; that the boundary corners, angle points, points of curvature/tangency and interior corners of this subdivision were not set at the time this plat was signed by me and that these corners are to be set after construction of the public infrastructure and final lot grading within the subdivision; and that all previously existing property markers are sufficiently described on this document as found and all set markers are a minimum of 5/8– inch diameter iron rod with surveyor's cap.

STATE OF TEXAS
REGISTERED
ROBERT L. BOELSCHE
4446
PROFESSIONAL
LAND SURVEYOR

Robert C Boelsche
Robert Boelsche, Registered Professional Land Surveyor
Texas Registration No. 4446

This is to certify that the Planning, Development and Zoning Commission of the City of Manvel, Texas, has recommended approval of this plat of MERIDIANA ELEMENTARY SCHOOL SITE NO 2 in conformance with laws of the State of Texas and the ordinances of the City of Manvel as shown hereon and authorizes the recording of this plat this _____ day of _____, 2022.

_____
Planning, Development and Zoning Commission

This is to certify that the City Council of the City of Manvel, Texas, has approved this plat of MERIDIANA ELEMENTARY SCHOOL SITE NO 2 in conformance with laws of the State of Texas and the ordinances of the City of Manvel as shown hereon and authorizes the recording of this plat this day of _____, 2022.

_____
City Council

APPROVED BY BRAZORIA COUNTY DRAINAGE DISTRICT NO. 5

Lee Walden, P.E., President	Date	Kerry L. Osburn Vice President	11/1/21 Date
Brandon Middleton Secretary/Treasurer	11/1/21 Date	Jarrod D. Aden, P.E., C.F.M. District Engineer	11/1/21 Date

Note: Project field startup will start within 365 calendar days from date here shown. Continuous and reasonable field site work is expected.

BCCDD 5 ID# 210050

METES AND BOUNDS DESCRIPTION
MERIDIANA ELEMENTARY SCHOOL SITE NO 2
BEING 13.00 ACRES SITUATED IN THE
OLIVER HALL SURVEY, ABSTRACT 203,
BRAZORIA COUNTY, TEXAS

A 13.00 ACRE TRACT OF LAND SITUATED IN THE OLIVER HALL SURVEY, ABSTACT NO. 203, BRAZORIA COUNTY, TEXAS, BEING OUT OF A CALLED 884.331 ACRE TRACT RECORDED UNDER BRAZORIA COUNTY CLERKS FILE NUMBER (B.C.C.F. NO.) 2006035182, SAID 13.00 ACRE TRACT OF LAND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS (BEARINGS BASED ON TEXAS STATE PLANE COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE 4204, AS DETERMINED BY GPS MEASUREMENTS):

COMMENCING at a 5/8–inch iron rod with cap stamped "E.H.R.A. 713–784–4500" called for and found marking the northerly end of a 25' radius return in the easterly right–of–way line of North Inspiration Way as per the plat of Meridiana Parkway Phase 6 recorded under File Number 2021001846 Brazoria County Plat Records (B.C.P.R.), and marking the southeasterly corner of North Inspiration Way as per plat recorded under File Number 2021007546 of the B.C.P.R.,

THENCE, along the easterly right–of–way line North Inspiration Way as per said recorded plat the following three (3) courses and distances:

North 30°06'57" West, for a distance of 205.86 feet to a 5/8–inch iron rod with cap stamped "E.H.R.A. 713–784–4500" called for and found marking a point of curvature,

In a northeasterly direction along the arc of said curve to the right having a radius of 770.00 feet, a central angle of 11°48'04", an arc length of 158.60 feet, and a chord bearing of North 24°12'54" West, for a distance of 158.32 feet to a 5/8–inch iron rod with cap stamped "E.H.R.A. 713–784–4500" called for and found marking a point of tangency,

North 18°18'52" West, for a distance of 306.45 feet to a 5/8–inch iron rod with cap stamped "E.H.R.A. 713–784–4500" set marking southwesterly corner and POINT OF BEGINNING of the herein described tract of land;

THENCE, continuing along the easterly right–of–way line of North Inspiration Way the following three (3) courses and distances:

(1) North 18°18'52" West, for a distance of 11.30 feet to a 5/8–inch iron rod with cap stamped "E.H.R.A. 713–784–4500" called for and found marking a point of curvature,

(2) In a northwesterly direction along the arc of said curve to the left having a radius of 830.00 feet, a central angle of 32°02'51", an arc length of 464.25 feet, and a chord bearing of North 34°20'18" West, for a distance of 458.22 feet to a 5/8–inch iron rod with cap stamped "E.H.R.A. 713–784–4500" called for and found marking a point of tangency,

(3) North 50°21'43" West, for a distance of 176.75 feet a found a 5/8–inch iron rod with cap stamped "E.H.R.A. 713–784–4500" set for northwesterly corner of the herein described tract of land,

(4) THENCE, North 41°16'34" East, for a distance of 229.02 feet to a 5/8–inch iron rod with cap stamped "E.H.R.A. 713–784–4500" set for corner;

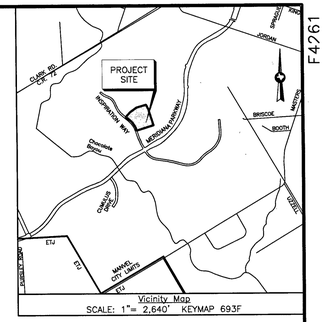
(5) THENCE, North 54°11'54" East, for a distance of 297.26 feet a 5/8–inch iron rod with cap stamped "E.H.R.A. 713–784–4500" set for corner;

(6) THENCE, North 74°09'15" East, for a distance of 362.67 feet to a 5/8–inch iron rod with cap stamped "E.H.R.A. 713–784–4500" set for northeasterly corner of the herein described tract;

(7) THENCE, South 26°32'51" East, for a distance of 187.25 feet to a 5/8–inch iron rod with cap stamped "E.H.R.A. 713–784–4500" set for corner;

(8) THENCE, South 17°37'05" East, for a distance of 613.69 feet to a 5/8–inch iron rod with cap stamped "E.H.R.A. 713–784–4500" set for corner;

(9) THENCE, South 72°22'55" West, for a distance of 642.51 feet to the POINT OF BEGINNING and containing 13.00 acres of land.



Vicinity Map
SCALE: 1"= 2,640' KEYMAP 693F

BENCHMARK:

NGS MONUMENT # E 306 DISK SET IN TOP OF CONCRETE MONUMENT, LOCATED 2.0 MILES WEST OF MANVEL, 2 MILES WEST ALONG THE GULF, COLORADO AND SANTA FE RAILWAY FROM THE STATION AT MANVEL, BRAZORIA COUNTY, 0.2 MILE WEST OF A SHELL–ROAD CROSSING, 5–1/2 FEET NORTHWEST OF MILE POLE 38, 39 FEET SOUTH OF THE SOUTH RAIL, 33 FEET NORTH OF THE CENTERLINE OF A DIRT ROAD, 6.7 FEET NORTH OF THE RIGHT–OF–WAY FENCE, 3 FEET WEST OF A WHITE WOODEN WITNESS POST AND SET IN THE TOP OF A CONCRETE POST ABOUT FLUSH WITH THE GROUND.
ELEV.=52.00 (NAVD '88) 1991 ADJUSTMENT

MINIMUM FINISH FLOOR ELEVATION	
BLOCK/RESERVE	ELEVATION
BLOCK 1	48.75'

FINAL PLAT MERIDIANA ELEMENTARY SCHOOL SITE NO 2

BEING A SUBDIVISION OF 13.00 ACRES OUT OF THE OLIVER HALL SURVEY, ABSTRACT 203, CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

1 BLOCK 1 RESERVE (13.00 Acres)

OWNER

GR–M1, LTD.
A TEXAS LIMITED PARTNERSHIP
1602 AVENUE D, SUITE 100
KATY, TEXAS 77493
PH (832) 437–7863

FEBRUARY 4, 2022

ENGINEER/SURVEYOR

EHRA
ENGINEERING THE FUTURE SINCE 1936
10011 MEADOWGLEN LN
HOUSTON, TEXAS 77042
713-784-4500
WWW.EHRAINC.COM
TBPE No. F-726
TBPELS No. 10092300

F4261

E4261

JOB NO. 081–011–128

PATH:R:\2008\081–011–128\DRAWING\PLAT\081011128V–PBFP1–MANVEL ELEM NO2 BY:SVJ DATE:2021–09–29

E4261

GENERAL NOTES:

1. Bearing orientation is based on the Texas State Plane Coordinate System of 1983, SouthCentral Zone as determined by GPS measurements. The coordinates shown hereon are Texas South Central Zone No. 4204 State Plane Grid Coordinates (NAD83) and may be brought to surface by applying the following combined scale factor: 0.99986742185.

2. According to the Federal Emergency Management Agency Flood Insurance Rate Map, Brazoria County, Texas, Community Panel No. 48039C0110K, dated December 30, 2020, a portion of the property lies within **Unshaded Zone "X" (areas determined to be outside the 500-year floodplain).**

   This flood statement does not imply that the property or structures thereon will be free from flooding or flood damage. On rare occasions floods can and will occur and flood heights may be increased by man-made or natural causes. The location of the flood zone was determined by scaling from said FEMA map. The actual location, as determined by elevation contours, may differ. Edminster, Hinshaw, Russ & Associates, Inc. d/b/a EHRA, assumes no liability as to the accuracy of the location of the flood zone limits. This flood statement shall not create liability on the part of Edminster, Hinshaw, Russ & Associates, Inc. d/b/a EHRA.

3. B.C.C.F. NO. indicates Brazoria County Clerk's File Number.
   B.C.P.R. indicates Brazoria County Plat Records.
   B.L. indicates Building Line.
   (F) indicates Found 5/8-inch capped iron rod stamped "E.H.R.A. 713-784-4500".
   FND. indicates Found.
   NO. indicates Number.
   P.O.B. indicates Point Of Beginning.
   P.O.C. indicates Point Of Commencing.
   P.U.E. indicates Public Utility Easement.
   R.O.W. indicates Right-Of-Way.
   SQ. FT. Square Feet.

4. Property within the boundaries of this plat and adjacent to any drainage easement, ditch, gully, creek, or natural drainage way shall hereby be restricted to keep such drainage ways and easements clear of any fences, buildings, plantings, or other obstructions.

5. The property subdivided in the foregoing plat lies in Brazoria County, the City of Manvel, Brazoria County M.U.D. No. 57, Alvin Independent School District, and Brazoria County Drainage District #5.

6. The Developer/School District shall be responsible for maintenance of all reserves.

7. The terms and conditions of Ordinance numbers 2009-0-03, 2009-0-04, and 2009-0-05 of the City of Manvel, Texas dated February 23, 2009, may affect this plat.

8. All sidewalks shall be constructed in accordance with City of Manvel Ordinance No. 2009-0-04.

9. No residential, commercial, or industrial structure, other than structures necessary to operate the pipeline, shall be erected or moved to a location nearer than 50 feet to any pipeline, except for low pressure distribution system pipeline as defined in section 62-2, as per Manvel Ordinance Sec. 62-116a.

10. No residential, commercial, or industrial structures shall be permitted to be erected nearer than 150 feet from any oil or gas well or related facility other than structures necessary to operate the oil or gas well or facility, as per Manvel Ordinance Sec. 62-116b.

11. No building, plumbing, electrical, or mechanical permit shall be issued by the city for the construction or repair of any structure on a lot, tract, or parcel of land within a subdivision for which a final, minor, or amending plat has not been approved by the city and filed of record. No building, plumbing, electrical, or mechanical permit shall be issued by the city for the construction or repair of any structure on a lot, tract, or parcel of land within a subdivision in which the required storm drainage improvements, which may include detention ponds, have not been constructed and the permanent public improvements have not been approved and accepted by the city.

12. This final plat will expire two (2) years after final approval by Council, if construction of the improvements has not commenced within the two-year initial period or the one-year extension period granted by Council.

13. A one-year maintenance bond, in the amount of fifty percent (50%) of the cost of the infrastructure improvements, valid one (1) year from the date the infrastructure is accepted and/or approved by the City (within city if applicable and will be required before permits are issued.

14. There are no visible or apparent pipelines within the boundaries of this subdivision.

15. All boundary corners for the plat shown hereon are set 5/8-inch iron rods with cap stamped "E.H.R.A. 713-784-4500", unless otherwise noted.

16. The boundary for this plat has a closure in excess of 1:15,000.

17. The drainage on adjacent property will not be impacted by this development.

18. There are 0.00 acres of unencumbered open space within the boundary of this plat.

19. Development regulations and City permits are required on all property.

BRAZORIA COUNTY DRAINAGE DISTRICT NO. 5:

1. Slab elevations (finished floor) shall be a minimum of 2 feet above finished grade.

2. All drainage ecsements shown hereon shall be kept clear of fences, buildings, plantings and other obstructions to the operation and maintenance of drainage facilities.

3. All property shall drain into the drainage easement only through an approved drainage structure.

4. All drainage easements and detention pond reserves shown on this plat will be maintained by the property owners and/or business owners; provided, however, and governmental entity have jurisdiction, including, without limitation, Brazoria County, Texas and Brazoria County Drainage District #5, shall have the right, but not the obligation to enter upon the drainage easements to perform maintenance operations at any time after the date hereof.

5. The property identified in the foregoing plat lies within Brazoria County Drainage District #5.

6. This rural commercial site employs a natural drainage system, which is intended to provide drainage for the site that is similar to that which existed under pre-development conditions. Thus, during large storm events, ponding of water should be expected to occur on the site to the extent it may have prior to development, but such ponding should not remain for an extended period of time.

7. Land use within the subdivision is limited to an average imperviousness of no more than 72 percent. The drainage and/or detention system has been designed with the assumption that this average percent, imperviousness will not be exceeded. If this percentage is to be exceeded, a replat and/or redesign of the system may be necessary.

8. Other than shown hereon, there are no pipeline easements or pipelines within the boundaries of this plan.

9. All storm water drainage pipes, culverts, tiles or other (includes driveway culverts) will be minimum 24" I.D. or equal.

10. Dedicated drainage easement(s) granted to Brazoria County Drainage District #5 for drainage maintenance purposes shall include 45 feet top of bank, plus the sum (footage) of both ditch side slopes and channel bottom and 45 feet of bank on the opposite bank.

11. Dedicated ingress/egress accesses are granted to Brazoria County Drainage District #5 (see District Resolution No 2007-06 & 2007-07). Access will be gated and locked with Brazoria County Drainage District #5's lock.

12. Prohibited use of "metal" pipe in storm water/sewer applications (See District Resolution No. 2007-08).

13. Prohibited use of "rip rap" in storm water/sewer applications. (District Policy).

14. Pipelines, utility lines and other crossing under any Brazoria County Drainage District #5 ditch require approval and permitting prior to construction.

15. All dedicated storm sewer drainage and/or access easements to be granted to Brazoria County Drainage District #5 by the property owner will be initiated and recorded, at the property owner's expense, in Brazoria County, Texas with a "Recorded Document Number" affixed to said easement prior to final approval granted by Brazoria County Drainage District #5 Board of Commissioners.

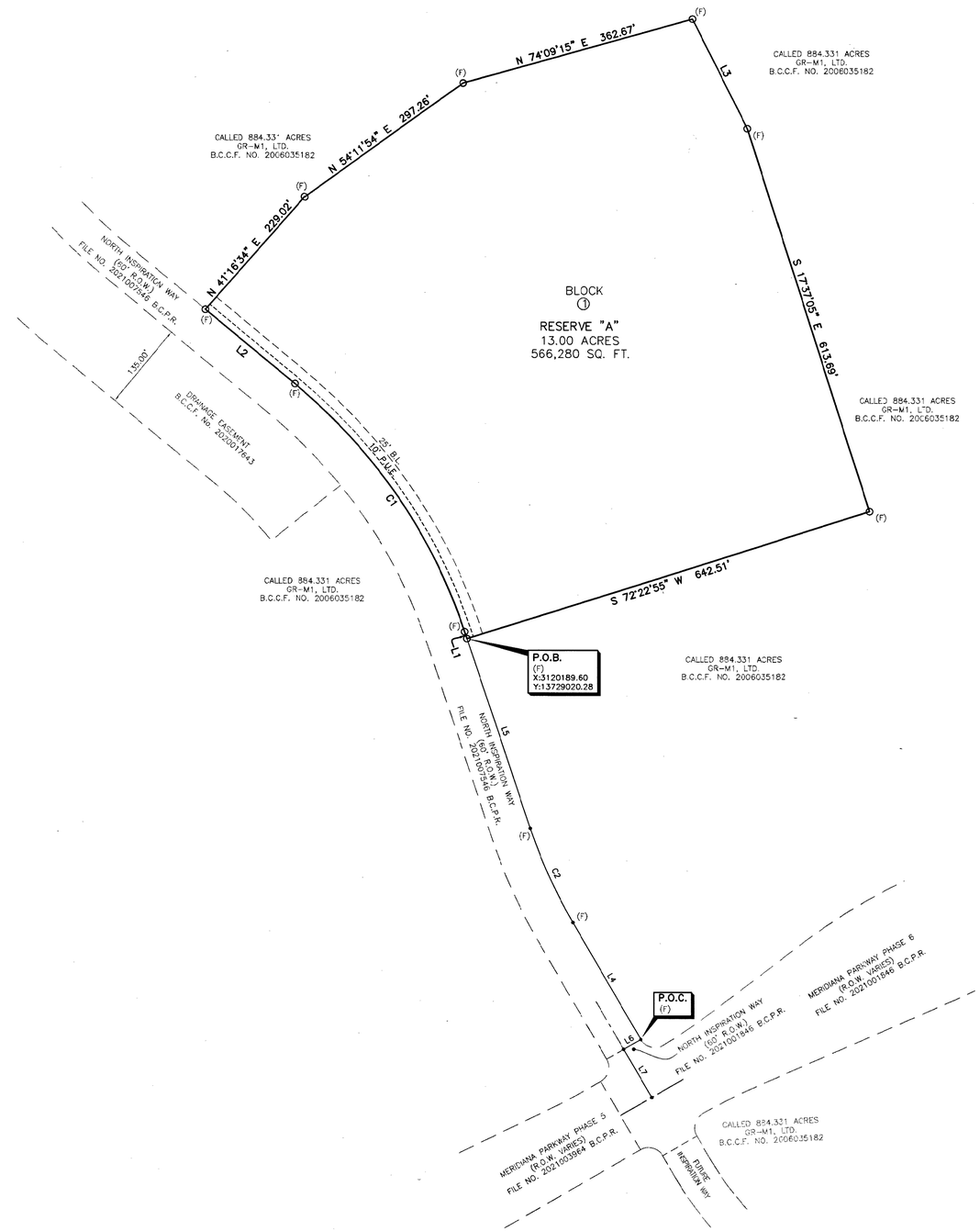
16. It will be the property owner's responsibility to verify if any Brazoria County Drainage District #5 "Dedicated" drainage easements are on or cross their property. If so, the property owner will comply as stated within the recorded easement.

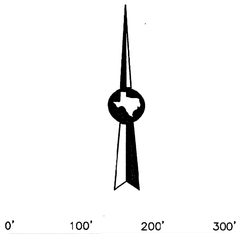
17. Project field start-up will start within 365 calendar days from date shown here. Continuous and reasonable field site work is expected. See Brazoria County drainage criteria manual section 1, Introduction; Sub-Section 1.5. Plat and Plan approval process, and drainage acceptance procedures; time limit for approval and Brazoria County Drainage District #5 Resolution 2011-1, allowable time(s) and procedures for starting-up approved projects.

CURVE TABLE					
CURVE	RADIUS	DELTA ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	830.00'	32°02'51"	464.25'	N 34°20'18" W	458.22'
C2	770.00'	11°48'04"	158.60'	N 24°12'54" W	158.32'

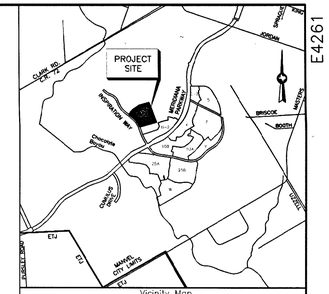
LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 18°18'52" W	11.30'
L2	N 50°21'43" W	176.75'
L3	S 26°32'54" E	187.75'
L4	N 30°06'57" W	205.86'
L5	N 18°18'52" W	306.45'
L6	S 59°38'31" W	30.00'
L7	S 30°06'57" E	85.13'

RESERVE TABLE		
RESERVE	RESTRICTED TO	AREA
A	SCHOOL PURPOSES	566,280 SQ.FT. / 13.00 ACRES





SCALE: 1" = 100'



Vicinity Map
SCALE: 1"= 2,640' KEYMAP 693F

BENCHMARK:

NGS MONUMENT # E 306 DISK SET IN TOP OF CONCRETE MONUMENT, LOCATED 2.0 MILES WEST OF MERIDIANA, 2 MILES WEST ALONG THE GULF, COLORADO AND SANTA FE RAILWAY FROM THE STATION AT MANVEL, BRAZORIA COUNTY, 0.2 MILE WEST OF A SHELL-ROAD CROSSING, 5-1/2 FEET NORTHWEST OF MILE POLE 38, 39 FEET SOUTH OF THE SOUTH RAIL, 33 FEET NORTH OF THE CENTERLINE OF A DIRT ROAD, 6.7 FEET NORTH OF THE RIGHT-OF-WAY FENCE, 3 FEET WEST OF A WHITE WOODEN WITNESS POST AND SET IN THE TOP OF A CONCRETE POST ABOUT FLUSH WITH THE GROUND.
ELEV.=52.00 (NAVD '88) 1991 ADJUSTMENT

MINIMUM FINISH FLOOR ELEVATION	
BLOCK/RESERVE	ELEVATION
BLOCK 1	48.75'

FINAL PLAT
MERIDIANA ELEMENTARY SCHOOL SITE NO 2

BEING A SUBDIVISION OF 13.00 ACRES OUT OF THE OLIVER HALL SURVEY, ABSTRACT 203, CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

1 BLOCK 1 RESERVE (13.00 Acres)

OWNER

GR-M1, LTD.
A TEXAS LIMITED PARTNERSHIP
1602 AVENUE D, SUITE 100
KATY, TEXAS 77493
PH (832) 437-7863

FEBRUARY 4, 2022

ENGINEER/SURVEYOR

EHRA
ENGINEERING THE FUTURE SINCE 1936
10011 MEADOWGLEN LN
HOUSTON, TEXAS 77042
713-784-4500
WWW.EHRAINC.COM
TBPE No. F-726
TBPELS No. 10092300

JOB NO. 081-011-128

PATH:R:\2008\081-011-128\DRAWING\PLAT\081011128V-PBFP1-MANVEL ELEM NO2 BY:SVJ DATE:2021-09-29

E4261

Land Use Table

Use	Gross Area	%
Single Family (SF)	+/- 941 Ac.	57%
Patio Home (PH)	+/- 55 Ac.	3%
Townhome (TH)	+/- 36 Ac.	2%
Village Center (VC)	+/- 38 Ac.	2%
Commercial (C)	+/- 13 Ac.	1%
Institutional (I)	+/- 73 Ac.	4%
Rights-of-Way*	+/- 99 Ac.	6%
Parks & Open Space (P-OS)	+/- 408 Ac.	25%
Drill Site		
Totals	+/- 1,663 Ac.	100%

* Includes proposed major thoroughfares, collectors, and neighborhood collectors.

Legend

- (#) Private Gated Section
- (#) Public Section
- Divided or Boulevard Entry (See Note 1)
- Standard Entry (See Note 2)

Notes

1. A divided or boulevard entry consisting of two (2) 20-foot wide travel lanes separated by a median having a minimum width of 14 feet shall be considered two points of access.
2. A standard entry is the right-of-way width determined by Table 2 (Page 17) or as otherwise stated in the adopted O-PUD document.
3. Public sections may become private gated sections without additional consideration. Road connections between private gated sections and public sections shall not be required. This note shall not apply to Section 20 and Section 26 as identified on this document.
4. The Clark Road ingress/egress from Section 20 and S Masters Road ingress/egress from Section 26B shall maintain a minimum public right-of-way width of 60-feet with no parking.

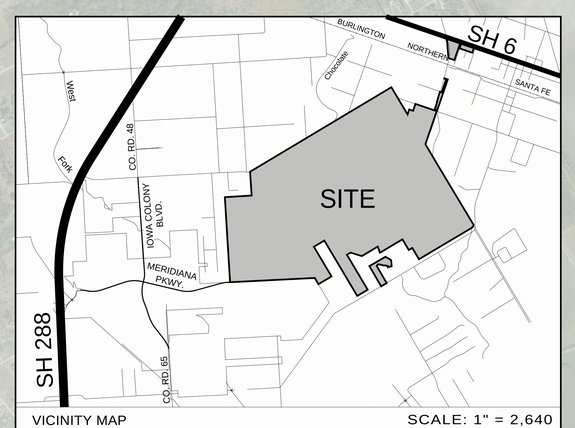
THIS GENERAL DEVELOPMENT PLAN APPROVED BY THE CITY OF MANVEL PLANNING, DEVELOPMENT, AND ZONING COMMISSION ON _____.

_____
PLANNING, DEVELOPMENT AND ZONING COMMISSION

SH 6
SH 288
CR 64
Kruger Road
Jordan Road
CLARK ROAD
MASTERS ROAD
MERIDIANA PARKWAY
CHOCOLATE BAYOU
IOWA COLONY CITY LIMIT
IOWA COLONY REGIONAL PARK 102.1 AC.
ELEMENTARY SCHOOL 15 AC.
REC. CENTER 4.6 AC.
JR. HIGH SCHOOL 28 AC.
ELEMENTARY SCHOOL 13 AC.
20 AC. DRILL SITE/ PARK
VILLAGE CENTER 10 AC.
INSTITUTIONAL
TOWNHOME
TH
PATIO
COMM.
PARK
DET.
LIFT STATION
WWTP
POND A
POND B
POND C
POND D
POND E
POND F-1
POND F-2
POND G
POND H
POND I
POND J
POND K
POND L 8.0 AC.
POND M 17 AC.
POND N
POND O
POND P
POND Q 8 AC.
POND R 11 AC.
POND T +/- 15 AC.
POND V +/- 4 AC.
POND W 14 AC.
POND X 13 AC.
POND Y 11 AC.
POND Z 23 AC.
POND N-2 +/- 4 AC.
POND O-2 +/- 5 AC.
POND C-2 5 AC.
POND D-2 8 AC.
POND #9 9 AC.
POND S 6 AC.
MUD NO. 54 WATER PLANT +/- 2 AC.
MUD NO. 54 WATER PLANT +/- 1 AC.
SF
COMM
PATIO
TOWNHOME
INSTITUTIONAL

GDP AMENDMENTS

Amendment #1 Approved:	05/18/2009
Amendment #2 Tabled:	06/25/2018
Amendment #3 Tabled:	07/09/2018
Amendment #4 Tabled:	07/23/2018
Amendment #5 Approved:	10/09/2018
Amendment #6 Approved:	10/22/2018
Amendment #7 Approved:	11/26/2018
Amendment #8 Approved:	01/28/2019
Amendment #9 Approved:	05/13/2019
Amendment #10 Not Approved:	06/10/2019
Amendment #11 Approved:	07/08/2019
Amendment #12 Not Approved:	08/12/2019
Amendment #13 Approved:	09/09/2019
Amendment #14 Approved:	12/09/2019
Amendment #15 Approved:	02/24/2020
Amendment #16 Approved:	11/09/2020
Amendment #17 Approved:	12/14/2020
Amendment #18 Not Approved:	04/12/2021
Amendment #19 Not Approved:	06/14/2021
Amendment #20 Withdrawn:	11/16/2021



VICINITY MAP SCALE: 1" = 2,640

Meridiana General Development Plan: Amendment #21

Brazoria County, TX

November 19, 2021

150' 300' 600' 1200'
SCALE: 1"=600' NORTH

EHRA
ENGINEERING THE FUTURE SINCE 1936
10011 MEADOWGLEN LANE
HOUSTON, TEXAS 77042
713.784.4500
WWW.EHRAINC.COM
TBPE No. F- 726
TBPLS No. 10092300

EHRA JOB NO. 081-011-150

No warranty or representation of intended use, design or proposed improvements are made herein. All Plans for land or facilities are subject to change without notice.

City of Manvel

P. O. Box 187
20025 HWY 6
Manvel, Texas 77578

(281) 489-0630
Fax (281) 489-0634

AGENDA REQUEST

REQUEST MUST BE MADE ACCORDING TO THE SUBMITTAL SCHEDULE

Meeting Requested: (Please check applicable meeting)

Planning, Development & Zoning	☐	City Council	☐	Both	☒

Date of Request: February 14, 2022 and February 22, 2022

YOUR REQUEST WILL BE PLACED ON THE NEXT AVAILABLE MEETING DATE. MEETINGS ARE SECOND AND FOURTH MONDAYS FOR PLANNING, DEVELOPMENT & ZONING AND FIRST AND THIRD MONDAYS FOR CITY COUNCIL. THE AGENDAS ARE POSTED TO THE GENERAL PUBLIC AT MANVEL CITY HALL AND ON OUR WEBSITE AT www.cityofmanvel.com. THE AGENDA IS POSTED AND WILL REMAIN POSTED CONTINOUSLY FOR AT LEAST 72 HOURS PRECEDING THE SCHEDULED TIME OF THE MEETING. PLEASE CHECK THE BOARD FOR YOUR MEETING SCHEDULE. WE STRONGLY ENCOURAGE YOU TO ATTEND THE MEETING FOR QUESTIONS AND ANSWERS. IF YOU ARE UNABLE TO ATTEND ACTION MAY BE TABLED UNTIL THE FOLLOWING MEETING.

Person to Speak: Brad Sweitzer or Jared Bowlin

Daytime Phone: 713-784-4500 Fax Number: 713-784-4577

E-mail Address: bsweitzer@ehrainc.com or jbowlin@ehrainc.com

Description of Request and Physical Address:

Consideration and possible action to approve and forward with recommendation to City Council, Final Plat of Meridiana Elementary School Site No. 2, being a subdivision of 13.00 acres out the Oliver Hall Survey, Abstract 203, City of Manvel, Brazoria County, Texas.

Plats:
Preliminary _____
Final _x_____

ALL DOCUMENTATION AND FEES ASSOCIATED WITH THIS AGENDA REQUEST MUST BE SUBMITTED ACCORDING TO THE MEETING SUBMITTAL SCHEDULE WHICH CAN BE FOUND ON OUR WEBSITE.
BY SIGNING THIS AGENDA REQUEST FORM I ACKNOWLEDGE THAT I HAVE READ AND UNDERSTAND THIS AGENDA REQUEST FORM.

_____ February 9, 2022
SIGNATURE DATE

DEVELOPMENT SERVICES DEPARTMENT
20025 HIGHWAY 6
MANVEL, TX 77578
281-489-0630

Planning, Development and Zoning Commission Plat Report

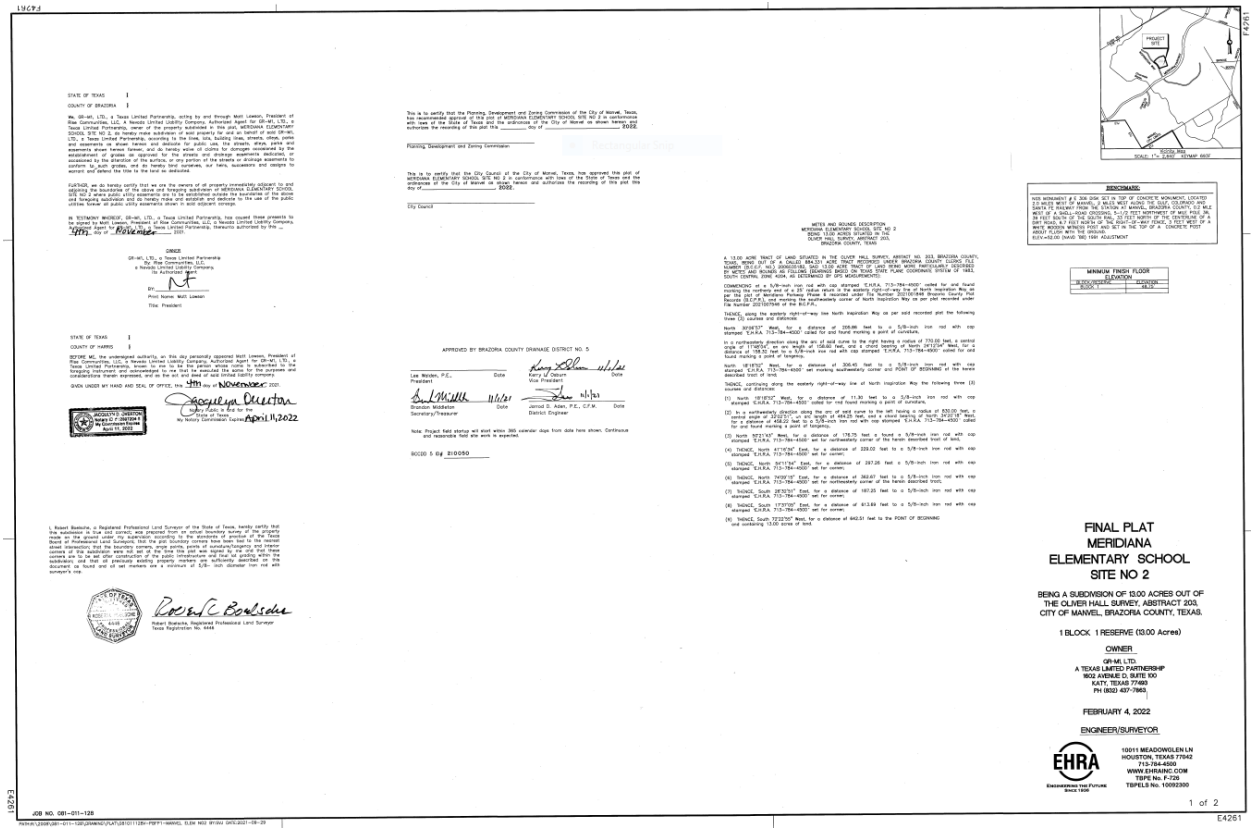
Plat Name	Meridiana Elementary School Site No. 2 Final Plat
Applicant	Lacey Bell, EHRA, Inc.
PD&Z Meeting Date	February 14, 2022
Recommendation	Approval
Submitted By	Kwasi Bosompem, City Planner

Staff Recommendation

The City staff recommends approval of the Meridiana Elementary School Site No. 2 Final Plat.

Development Services Department
20025 Highway 6
Manvel, TX 77578
281-489-0630

Plat Exhibit



STATE OF TEXAS §
COUNTY OF BRAZORIA §

We, GR-ML, LTD., a Texas Limited Partnership, acting by and through Matt Lowson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR-ML, LTD., a Texas Limited Partnership, owner of the property subdivided in this plat, MERIDIANA ELEMENTARY SCHOOL SITE NO 2 (a subdivision of 13.00 acres), and whose name is subscribed hereto, GR-ML, LTD., a Texas Limited Partnership, according to the lines, lots, building lines, streets, drives, parks and easements as shown hereon and dedicate for public use, the streets, drives, parks and easements shown hereon forever, and do hereby waive all claims for damages occasioned by the establishment of grades as approved for the streets and drainage easements dedicated, or occasioned by the alteration of the surface portions thereof to conform to such grades, and do hereby bind ourselves, our heirs, successors and assigns to warrant and defend the title to the land so dedicated.

FURTHER, we do hereby certify that we are the owners of all property immediately adjacent to and within 200 feet of the boundary of the above and foregoing subdivision and that MERIDIANA ELEMENTARY SCHOOL SITE NO 2 where public utility easements are (1) for establishment outside the boundaries of the above and foregoing subdivision and do hereby make and establish and dedicate to the use of the public utilities forever all public utility easements shown in said adjacent acreage.

IN TESTIMONY WHEREOF, GR-ML, LTD., a Texas Limited Partnership, has caused these presents to be signed by Matt Lowson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR-ML, LTD. a Texas Limited Partnership, thereunto authorized by this ___ day of _____, 2021.

OWNER
GR-ML, LTD., a Texas Limited Partnership
By: Rise Communities, LLC,
a Nevada Limited Liability Company,
Its Authorized Agent

BY: _____
Print Name: Matt Lowson
Title: President

STATE OF TEXAS §
COUNTY OF HARRIS §

BEFORE ME, the undersigned authority, on this day personally appeared Matt Lowson, President of Rise Communities, LLC, a Nevada Limited Liability Company, Authorized Agent for GR-ML, LTD., a Texas Limited Partnership, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and considerations therein expressed, and as the act and deed of said limited liability company.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 4th day of NOVEMBER, 2021.

Notary Public in and for the State of Texas
My Notary Commission Expires April 11, 2022

I, Robert Bielskie, a Registered Professional Land Surveyor of the State of Texas, hereby certify that this subdivision is true and correct, was prepared from an actual boundary survey of the property made on the ground under my supervision, that the corner boundary monuments of position of the Texas Board of Professional Land Surveyors, that the plat boundary corners have been tied to the nearest street intersection; that the boundary corners, angle points, points of curvature/tangency and interior lot corners were set with iron rods having caps stamped "EHRA" unless otherwise noted, and that all such corners are to be set after construction of the public infrastructure and final lot grading within the subdivision, and that all previously existing property markers are sufficiently described on the accompanying plat as found and all set markers are a minimum of 5/8" inch diameter iron rod with surveyor's cap.

Robert Bielskie, Registered Professional Land Surveyor
Texas Registration No. 6446

This is to certify that the Planning Development and Zoning Commission of the City of Manvel, Texas, has approved this plat of MERIDIANA ELEMENTARY SCHOOL SITE NO 2 in conformance with laws of the State of Texas and the ordinances of the City of Manvel as shown hereon, and authorizes the recording of this plat this ___ day of _____, 2022.

Planning, Development and Zoning Commission

This is to certify that the City Council of the City of Manvel, Texas, has approved this plat of MERIDIANA ELEMENTARY SCHOOL SITE NO 2 in conformance with laws of the State of Texas and the ordinances of the City of Manvel as shown hereon and authorizes the recording of this plat this ___ day of _____, 2022.

City Council

APPROVED BY BRAZORIA COUNTY DRAINAGE DISTRICT NO. 5

Lee Walden, P.E., President — Date
Kerry F. Osburn, Vice President — Date
Brandon Middleton, Secretary/Treasurer — Date
Jarrod D. Aden, P.E., C.F.M., District Engineer — Date

Note: Project field staking will start within 365 calendar days from date here shown. Continuous and reasonable field site work is expected.

BCDD 5 file 210050

NOTES AND BOUNDS DESCRIPTION
MERIDIANA ELEMENTARY SCHOOL SITE NO 2
BEING 13.00 ACRES SITUATED IN THE
OLIVER HALL SURVEY, ABSTRACT 203,
BRAZORIA COUNTY, TEXAS

A 13.00 ACRE TRACT OF LAND SITUATED IN THE OLIVER HALL SURVEY, ABSTRACT NO. 203, BRAZORIA COUNTY, TEXAS, BEING OUT OF A CALLED 884.251 ACRE TRACT RECORDED UNDER BRAZORIA COUNTY CLERKS FILE NUMBER 2021018 AND DESIGNATED AS "TRACT 1" AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS (ALL BEARINGS ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE 4204, AS DETERMINED BY GPS MEASUREMENTS):

COMMENCING at a 5/8-inch iron rod with cap stamped "E.H.R.A. 713-784-4500" noted for and found marking the northerly end of a 25' radius return in the easterly right-of-way line of North Inspiration Way as per 194 plat of Meridiana Parkway Phase 8 recorded under The Number 2021018149 Brazoria County Plat Records, said rod also marking the northwesterly corner of North Inspiration Way as per plat recorded under File Number 2021007048 of the B.C.P.R.;

THENCE, along the easterly right-of-way line North Inspiration Way as per said recorded plat the following three (3) courses and distances:

North 359°45'57" West, for a distance of 208.88 feet to a 5/8-inch iron rod with cap stamped "E.H.R.A. 713-784-4500" noted for and found marking a point of curvature;

In a northwesterly direction along the arc of said curve to the right having a radius of 770.00 feet, a central angle of 11°06'04", an arc length of 149.20 feet, and a chord bearing of North 04°12'04" West, for a distance of 148.92 feet to a 5/8-inch iron rod with cap stamped "E.H.R.A. 713-784-4500" noted for and found marking a point of tangency;

North 10°18'02" West, for a distance of 306.45 feet to a 5/8-inch iron rod with cap stamped "E.H.R.A. 713-784-4500" set marking southwesterly corner and POINT OF BEGINNING of the herein described tract of land;

THENCE, continuing along the easterly right-of-way line of North Inspiration Way the following three (3) courses and distances:

(1) North 10°18'02" West, for a distance of 11.30 feet to a 5/8-inch iron rod with cap stamped "E.H.R.A. 713-784-4500" noted for and found marking a point of curvature;

(2) In a northwesterly direction along the arc of said curve to the left having a radius of 830.00 feet, a central angle of 33°22'21", an arc length of 484.25 feet, and a chord bearing of North 06°22'48" West, for a distance of 458.22 feet to a 5/8-inch iron rod with cap stamped "E.H.R.A. 713-784-4500" noted for and found marking a point of tangency;

(3) North 50°13'49" West, for a distance of 178.75 feet a found a 5/8-inch iron rod with cap stamped "E.H.R.A. 713-784-4500" set for northwesterly corner of the herein described tract of land;

(4) THENCE, North 41°17'50" East, for a distance of 229.00 feet to a 5/8-inch iron rod with cap stamped "E.H.R.A. 713-784-4500" set for corner;

(5) THENCE, North 50°17'34" East, for a distance of 397.26 feet a 5/8-inch iron rod with cap stamped "E.H.R.A. 713-784-4500" set for corner;

(6) THENCE, North 74°09'10" East, for a distance of 360.87 feet to a 5/8-inch iron rod with cap stamped "E.H.R.A. 713-784-4500" set for northeasterly corner of the herein described tract;

(7) THENCE, South 28°36'51" East, for a distance of 187.25 feet to a 5/8-inch iron rod with cap stamped "E.H.R.A. 713-784-4500" set for corner;

(8) THENCE, South 17°37'05" East, for a distance of 613.69 feet to a 5/8-inch iron rod with cap stamped "E.H.R.A. 713-784-4500" set for corner;

(9) THENCE, South 72°22'55" West, for a distance of 640.51 feet to the POINT OF BEGINNING and containing 13.00 acres of land.

BENCHMARK:
NGS MONUMENT # X 308 DISK SET IN TOP OF CONCRETE MONUMENT, LOCATED 0.2 MILES SOUTH OF THE INTERSECTION OF STATE HIGHWAY 6 AND SOUTH PEARLAND FARM ROAD, 0.2 MILES SOUTH OF THE STATION AT MANVEL, BRAZORIA COUNTY, 12 MILS WEST OF A SMALL ROAD CROSSING, 5+/-15 FEET NORTHWEST OF MKT POLE 36, 5.0 FEET EAST OF THE EAST EDGE OF PAVEMENT OF SOUTH PEARLAND FARM ROAD, 6.7 FEET NORTH OF THE EAST-OF-WAY FENCE, 3 FEET WEST OF A WHITE WOODEN WITNESS POST AND SET IN THE TOP OF A CONCRETE POST ABOUT FLUSH WITH THE GROUND
ELEV.=52.00 (NAVD '88) 1991 ADJUSTMENT

MINIMUM FINISH FLOOR ELEVATION

BLOCK/RESERVE	ELEVATION
BLOCK 1	55.0

FINAL PLAT
MERIDIANA
ELEMENTARY SCHOOL
SITE NO 2

BEING A SUBDIVISION OF 13.00 ACRES OUT OF THE OLIVER HALL SURVEY, ABSTRACT 203, CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

1 BLOCK 1 RESERVE (13.00 Acres)

OWNER
GR-ML LTD.
A TEXAS LIMITED PARTNERSHIP
1602 AVENUE D, SUITE 100
KATY, TEXAS 77493
PH (832) 437-7863

FEBRUARY 4, 2022

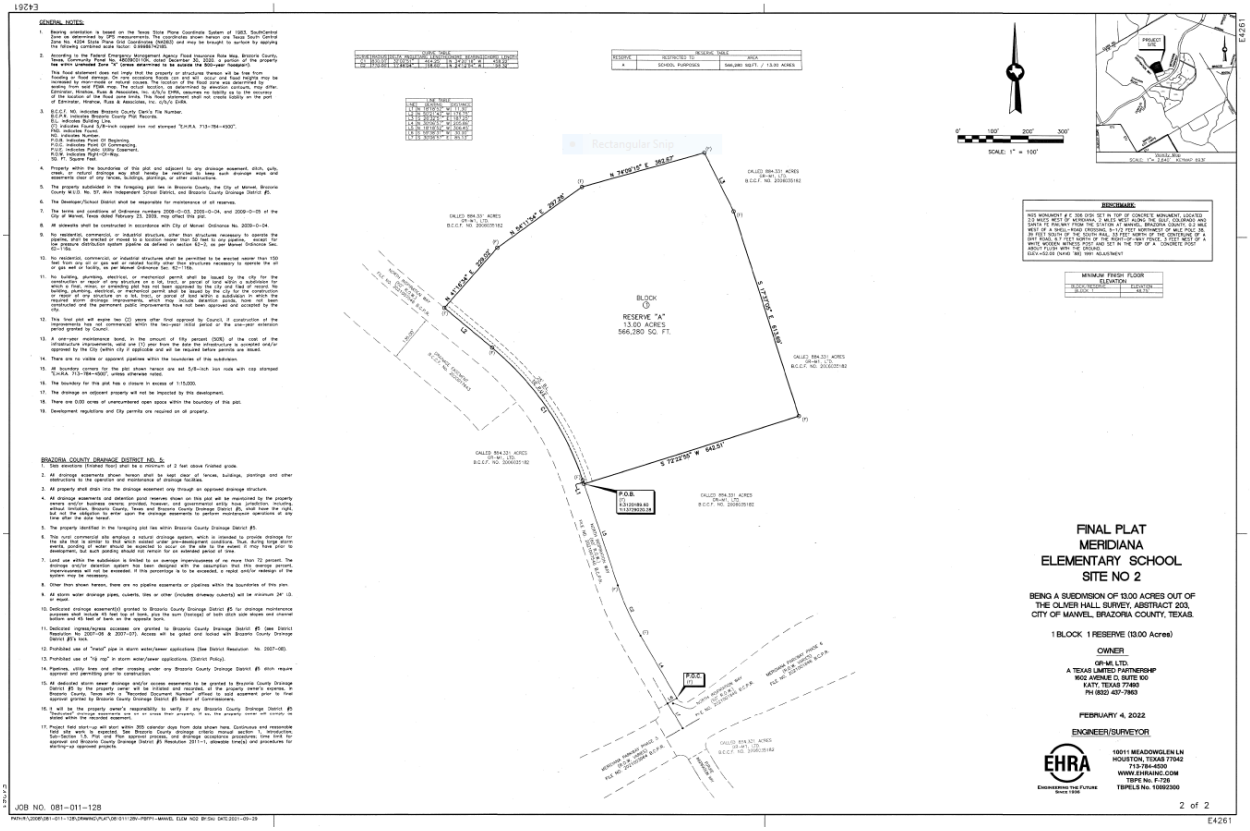
ENGINEER/SURVEYOR
EHRA
Engineering The Future Since 1936
10011 MEADOWGLEN LN
HOUSTON, TEXAS 77042
713-784-4500
WWW.EHRAINC.COM
TBPE No. F-726
TBPELS No. 10092300

1 of 2

JOB NO. 081-011-126

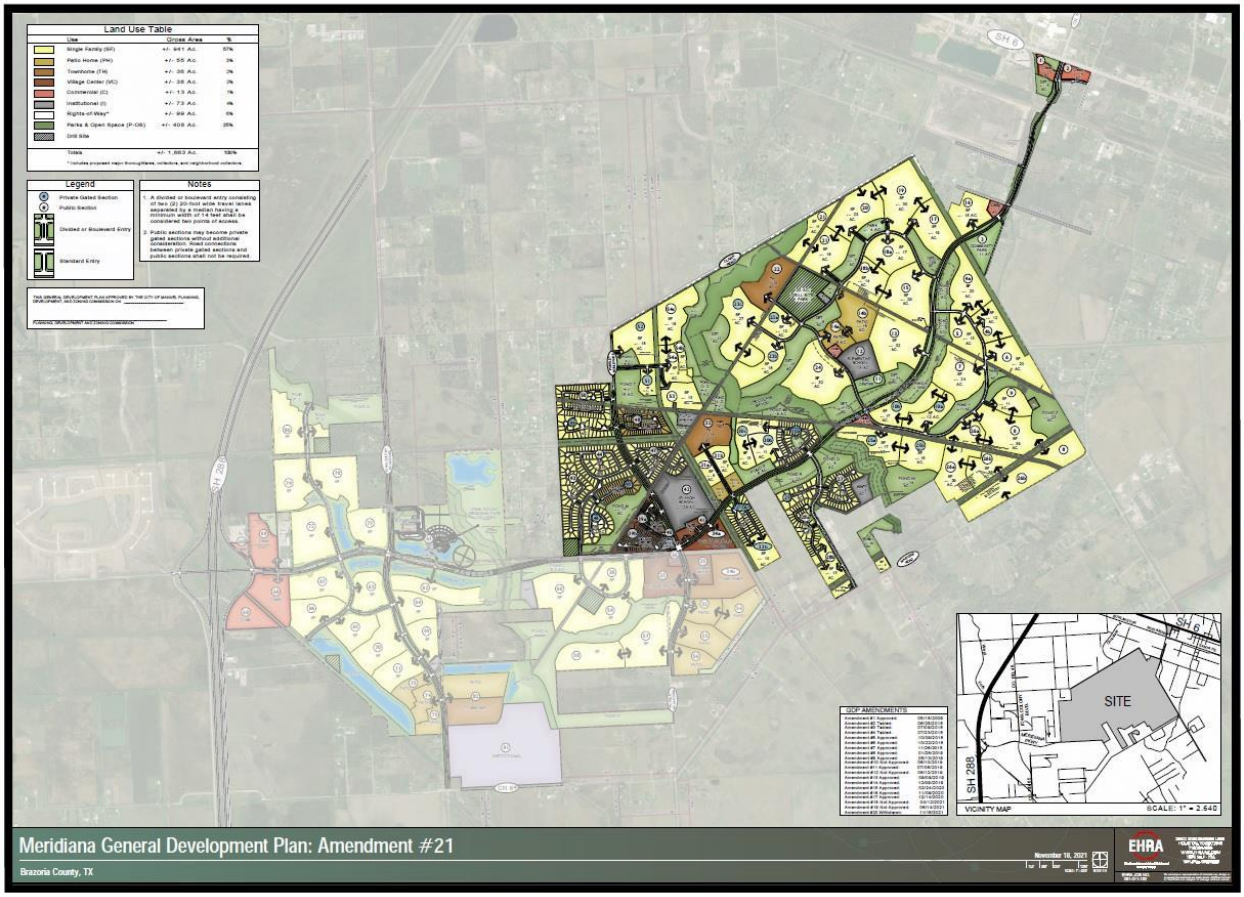
DEVELOPMENT SERVICES DEPARTMENT
20025 HIGHWAY 6
MANVEL, TX 77578
281-489-0630

Plat Exhibit



DEVELOPMENT SERVICES DEPARTMENT
20025 HIGHWAY 6
MANVEL, TX 77578
281-489-0630

Meridiana General Development Plan Amendment No. 21 (dated November 19, 2021)



MANVEL
CITY COUNCIL
DATA SHEET

MEETING DATE: February 7, 2022

TOPIC: Public hearing regarding amending the zoning classification of 21,000 square feet leased area located at 7507 Masters Road, Manvel, Texas, from Light Commercial District/State Highway 6 Overlay District (LC/SH6) to Light Commercial District/State Highway 6 Overlay District with Specific Use Permit (LC/SH6-SUP) authorizing NAICS use 62111 as a "Medical Office".

BACKGROUND: The property is a 21,000 square foot land area located on 7507 Masters Road, Manvel, Texas. The vicinity includes commercial uses located on SH6. Due to a need for small town clinics to provide healthcare services in rural communities, the owner, Manvel Development Co. Inc., and applicant, Infinity Family Clinic LLC, would like to operate a small-town family health care practice. The objective is to bring medical care closer to the Manvel community. In order to operate from the said location, the applicants have applied for a Special Use Permit to give flexibility and allow for a medical office use within the Light Commercial District/State Highway 6 Overlay District (LC/SH6) zoning. The applicant will use the entire property for the medical office and plans to operate from Monday to Friday 8:00 a.m. to 4: 30 p.m. The applicant will be required to provide light fixtures and unobstructed view from outside the property. Staff reviewed the application, conducted site visits, and prepared a report to the Planning, Development and Zoning Commission. Staff recommended the application to be approved with nine conditions. During the Commission's discussion, the condition of parking lot improvements was the main topic. Staff recommended the parking lot be improved to an asphalt surface with striped parking spaces. The existing parking lot consists of asphalt and crushed concrete. Both the asphalt and crushed concrete have not been properly maintained because it had pot holes and cracks which have puddles forming when it rains. The property owner did not agree with the recommendation to improve the parking lot due to financial costs. The Commissioners discussed the importance of parking lot maintenance because it plays a significant role in improving the safety patients in a wheel chair and for drivers and pedestrians. The Commission concurred with all of staff's proposed conditions, including parking lot improvement to asphalt and parking stall striping.

PD&Z RECOMMENDATION: The Planning, Development, and Zoning Commission recommended approval of Ordinance No. 2022-O-03 (7507 Masters Road Specific Use Permit) with a vote of 4 yeas to 1 nay.

STAFF RECOMMENDATION: City staff recommends approval of the proposed SUP with nine conditions (Ordinance No. 2022-O-03).

ATTACHMENTS: Staff report and Ordinance No. 2022-O-03

FUNDING ISSUES

_**X**_ **Not applicable**
___ **Not budgeted**
___ **Full amount already budgeted**
___ **Funds to be transferred from Acct.#**

SUBMITTING STAFF MEMBER Kwasi Bosompem	**FINANCE DIRECTOR APPROVAL** _____ **CITY MANAGER APPROVAL** _____

City Council
Specific Use Permit Request

Agenda of:	February 7, 2022	**Initiated By:**	Kwasi Bosompem City Planner
Department:	Planning Division	**Presented By:**	Kwasi Bosompem City Planner

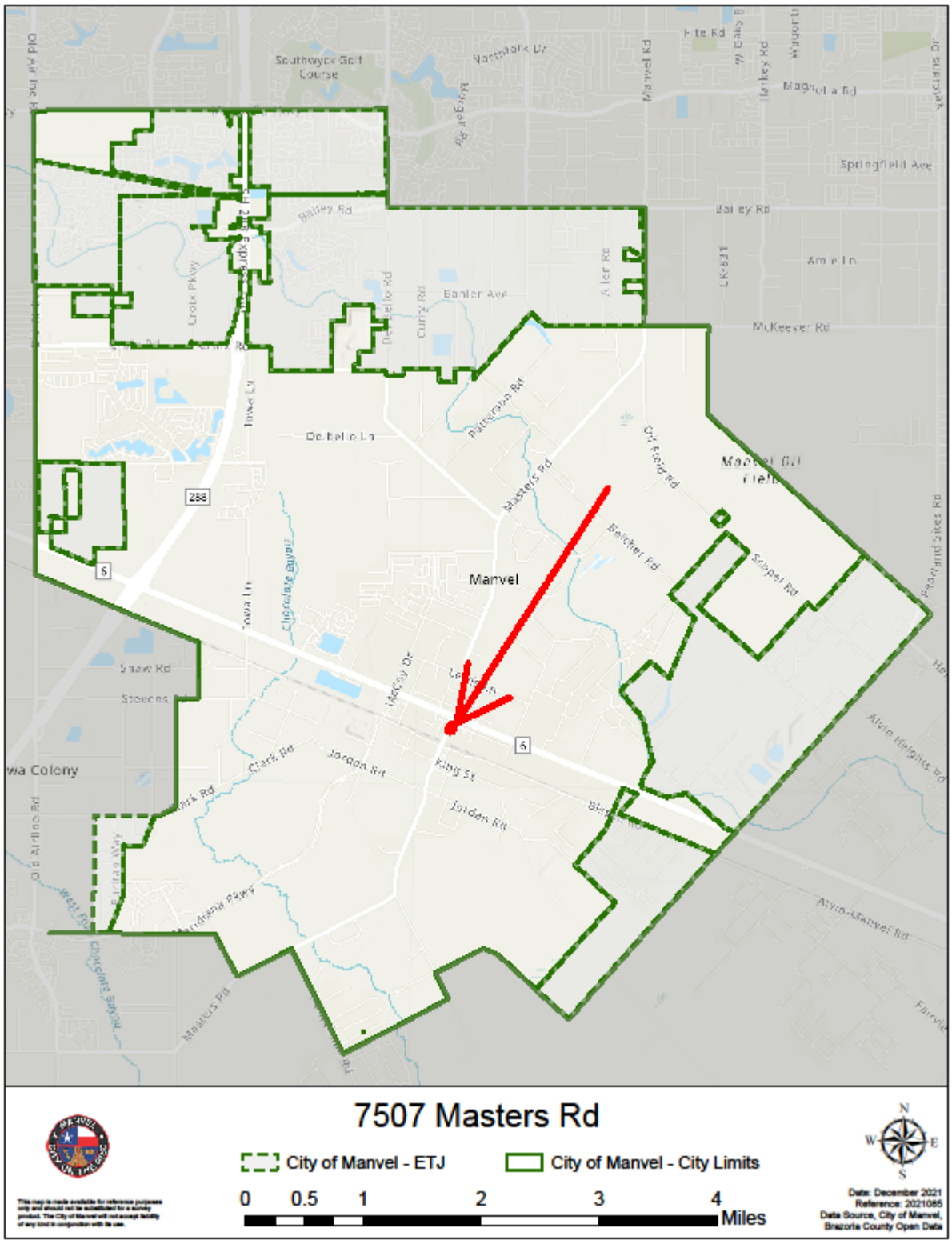
Subject/Proceeding
Specific Use Permit (SUP) to establish a medical office in 21,000 square feet lot area addressed at 7507 Masters Road in the Light Commercial District/State Highway 6 Overlay District (LC/SH6) to allow use of the Property for NAICS Use No.6211 – Medical Office.

Exhibits
Staff Report, Location Map, Subject Property Zoning Map, Subject Property and Surrounding Area Map, Application Documents, Authorization Letter, Application Letter Site Plans and Subject Property Exhibits and Site Photographs, and Public Hearing Notice.

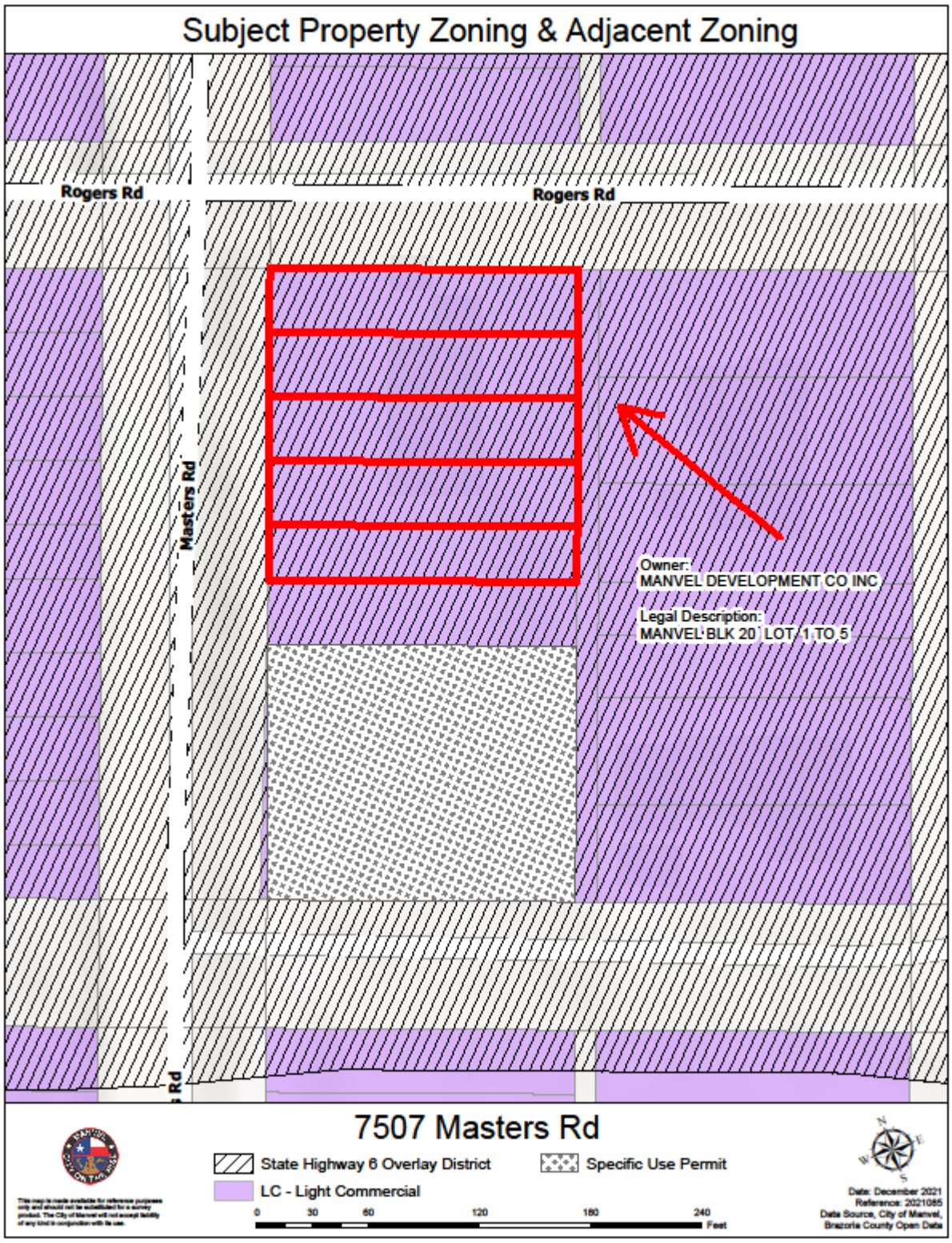
Recommended Action
A Public Hearing following by Consideration and Action from the City Council.

Executive Summary
A SUP provides a means to develop certain uses on a property while ensuring that the use is compatible with adjacent property and consistent with the character of the neighborhood. Approval of a SUP may establish reasonable conditions on the operation or location of the business with regulations as per the Ordinance of the City of Manvel. This is a proposed Special Use Permit (SUP) for a new medical office within the Light Commercial District/State Highway 6 Overlay District (LC/SH6). The proposed project site is developed at 7507 Masters Road. The proposed medical office use requires an SUP in the LC district. According to the City's Zoning Ordinance, NAICS use number 6211 requires a SUP in the Light Commercial District (LC). The draft exhibits included in the staff report are proposed to be incorporated into the SUP to support the analysis, review and more certainty to a recommendation. Staff overview of the proposed SUP is contained in the attached Staff Report section.

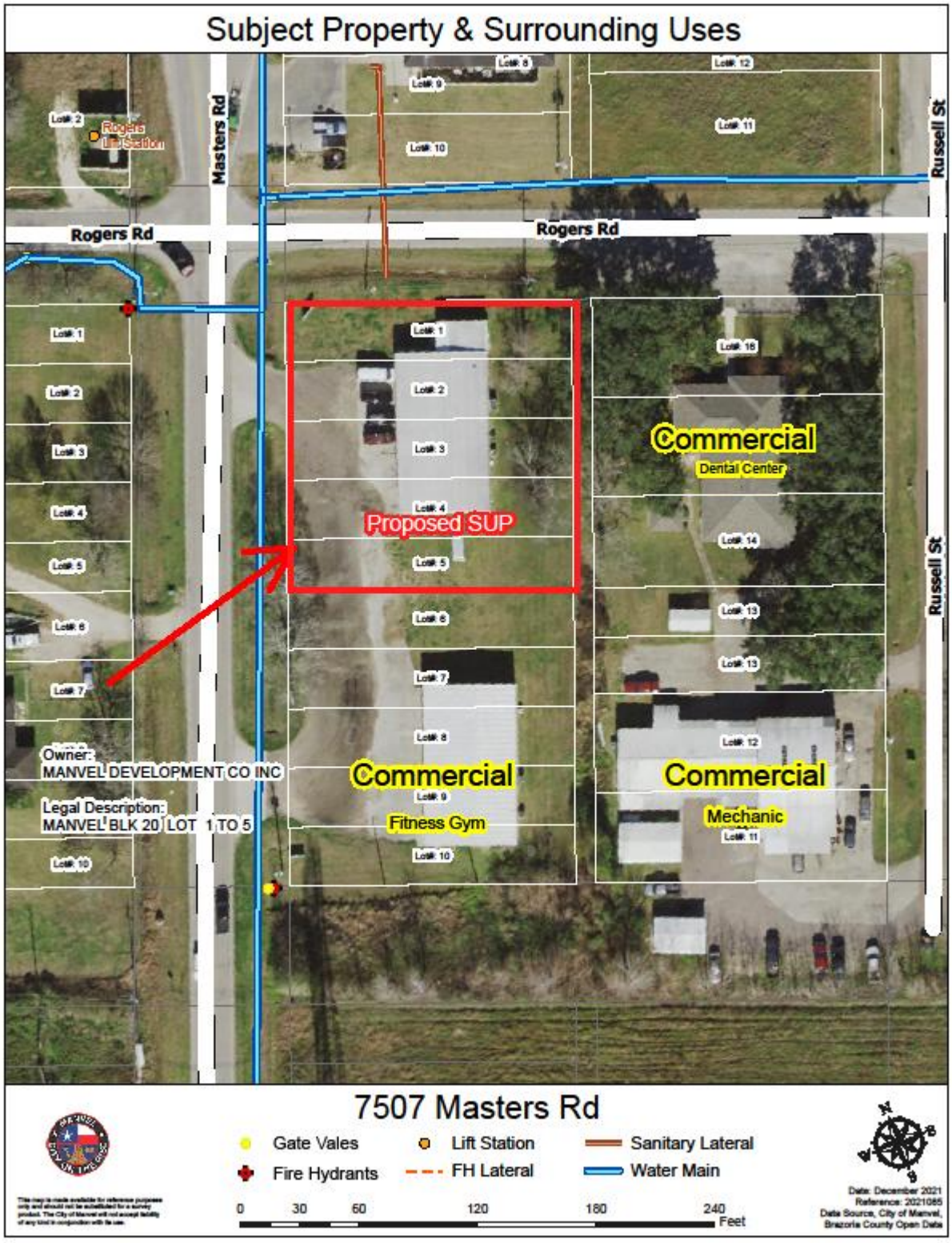
Location Map



Subject Property Zoning



Subject Property and Surrounding Uses



Staff Report

Zoning Ordinance Provisions for Specific Use Permits

Sec. 77-50. Uses requiring specific use permit (SUP). from City of Manvel Zoning Ordinance, Code of Ordinances

"(a) Certain uses of land, buildings or structures may not be appropriate under all circumstances in any given zoning district, but may be appropriate where adequate precautions can be taken to assure compatibility with surrounding uses, public need, and the orderly development of the city as a whole. This section provides council and planning commission the opportunity to deny or to conditionally approve those uses for which specific use permits are required. These uses generally have unusual characteristics or are of a public or semi-public character often essential or desirable for the general convenience and welfare of the community. Due to the nature of use, the importance of the use's relationship to the comprehensive plan, or possible adverse impact on neighboring properties of the use, review, evaluation, and exercise of planning commission judgment relative to the location and site plan of the proposed use are required.

(b) In Section 77-50 of the Zoning Ordinance (b), it states that "The City council, after receiving the recommendation of the planning commission, may by ordinance, grant a specific use permit for the permitted uses, as herein qualified by the permitted use table, in locations and zoning districts to permit a use where they are not otherwise permitted by this article, and may impose any appropriate conditions and safeguards to protect property and property values, and in the interest of health, safety or welfare."

General Site Information The following is a summary of general site information.

Surrounding Property Zoning	**North:** Light Commercial District/State Highway 6 Overlay District (LC/SH6) **South:** Light Commercial District (LC) **East:** Light Commercial District/State Highway 6 Overlay District (LC/SH6) **West:** Light Commercial District/State Highway 6 Overlay District (LC/SH6)
Surrounding Land Use	**North:** Commercial **South:** Commercial **East:** Commercial **West:** Commercial

In the 2018, a Special Use Permit Application for NAICS Use 813110 "Religious Organizations" was approved on Lots 7, 8 ,9, and 10 being located at 7515 South Masters Road and adjacent to the subject property for the proposed SUP This old SUP has since expired.

NAICS Classification of Medical Office (621111) (Offices of Physicians (except Mental Health Specialists)

The NAICS code of use proposed in this application describes medical practitioners as those who operate independent private or group practices in their own offices.

Staff Analysis

The applicant has requested to establish a medical office with a NAICS code of 6211 on a 21,000 square feet land area on Masters Road. The analysis of the application is undertaken with consideration of the vision statement of the Comprehensive Plan and Zoning Ordinance applicable sections as well as the June 7, 2021, edition of the City of Manvel's Design Criteria Manual (DCM). Analysis of the application will be guided by Section 77-50, *Uses requiring specific use permit*, Sections 71-31 of the Zoning Ordinance under Light Commercial zoning requirements, and Section 77-36, (State Highway 6 Overlay (SH-6) District.

Comprehensive Plan

The vision statement in the 2015 Comprehensive Plan seeks to maintain its rural character and small-town values while managing its growth by: "Benefiting from our strategic location by encouraging well planned quality retail, commercial and residential development that reflects and enhances our small-town quality of life. The proposed use is consistent with the Comprehensive Plan. The applicant proposes to use the existing office building for medical office uses. The proposal complements or is compatible with the surrounding uses and community facilities; and contributes to, enhances, or promotes the welfare of the area and adjacent properties. This request for a SUP is in not any potential conflict with the 2015 City of Manvel Comprehensive Plan. The proposed use is compatible with and not injurious to the use and enjoyment of neighboring property, nor significantly diminish or impair property values in the vicinity.

Zoning Ordinance Requirements

The proposed zoning classification shall be changed from the Light Commercial District/State Highway 6 Overlay District (LC/SH6) to Light Commercial District/State Highway 6 Overlay District with Specific Use Permit (LC/SH6-SUP) for uses permitted within such zone classification and Specific Use Permit, to allow use of the Property for NAICS Use No.6211-Medical Office. A medical office is subject to the regulations, restrictions and conditions defined in Section 77-50 (g) (4) of the Zoning Ordinance. This Section requires the following conditions:

a) The facility is only permitted to operate during the hours of 8:00 a.m. to 10:00 p.m. each day, unless authorized by an approved SUP;
b) All waiting and/or lobby areas shall maintain an unobstructed view from the outside; and
c) All doors shall remain unlocked and accessible during normal business hours.

State Highway 6 Overlay (SH-6) District

According to the Zoning Ordnance, the purpose of the State Highway 6 (SH6) Overlay District is to manage critical visual elements and to promote future development that showcases S.H. 6 as a high-quality, mixed-use, multi-modal transportation corridor in Manvel. This overlay is intended to direct development in the corridor toward compliance with its requirements if there is redevelopment or substantial improvement.

Landscaping

The applicant is not proposing landscaping upgrades. The site has no existing green space and partially paved with asphalt. As per the applicable Section of 77-51, *Plan Review, Landscaping requirements*, shall apply to the proposed development if there is redevelopment or substantial improvement to the site.

Access and Traffic

The site is located on a commercial corridor, South Master Road characterized by a variety of commercial uses. This generates activities all day creating a need for conditions to maintain commercial areas with a wide range of character and functions to serve the needs of current and proposed uses. Secondly, access to the site is by the main driveway on Masters Road to the partially paved area of the property. As noted in Exhibits 8, 9, and 10, the parking lot is made up of crushed concrete and asphalt surface, and has no striped

parking spaces for customers and employees. According to Section 77-45., *Parking*, of the Zoning Ordinance, the number of parking spaces required for medical office is one parking space for 300 square feet gross floor area. The applicant will be made to meet the parking requirement and pave with an asphalt surface.

Trip generation estimates for the proposed medical office can be calculated from the use of the average daily and peak hour trip generation rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition, 2021, under Land Use Code 720 (Medical-Dental Office Building). As a small medical office, it can be estimated from industry standards that a space for small medical office in rural setting is 2,000 gross floor area. ITE uses an estimate of 2.8 peak hour trips for a 1,000 sq. ft. of space. It can be estimated that the proposed medical office will have less than 5 peak hour trips and possibly less than 15 trips per day from 7:30 a.m. to 4:30 p.m. The proposed facility therefore will generate very minimal trips per day.

Summary

The property is located on Masters Road, which is identified as a "parkway" (120-feet wide) on the City's Major Thoroughfare Plan. The site is also zoned Light Commercial (LC) District and surrounded by other properties zoned LC and used commercially. Due to the property's access to a major thoroughfare and surrounding commercially used and zoned property, the use of a medical office is not out of character. However, some site conditions such as the parking lot are proposed for improvement. The existing parking lot consists of asphalt and crushed concrete with no striped parking spaces. The Design Criteria Manual (DCM) requires all parking lots to be concrete. Since the existing parking lot is partially asphalt and crushed concrete, staff is making a recommendation to pave the entire parking lot to asphalt as approved by the City Engineer. An asphalt surface parking lot will give stability for emergency vehicles as compared to crushed concreted. Staff is also making a recommendation to stripe the required parking spaces since no striped parking lot exist. Staff has also made recommendations for building façade, landscaping, and lighting improvements if new lighting is installed or if substantial improvement and/or redevelopment occur on site since the site is located in the State Highway 6 Overlay (SH6) District.

Report Update After Planning, Development and Zoning Commission Meeting

The main topic of discussion at the Planning, Development and Zoning Commission meeting focused on the existing condition of the parking lot. The existing parking lot is made up of crushed concrete and asphalt surface which is in need of maintenance. The existing parking lot does not have striped parking spaces or a fire lane. Because of the existing parking lot conditions, the Commission expressed concern for the health clinic customers, specifically handicapped customers. The existing condition of the parking lot will pose a challenge for any health clinic customer due to pot holes and an unstable paving surface. The site picture below was taken on the evening of the Commission meeting. It illustrates standing water in pot holes and tracking of wet, crushed concrete material. This supports the staff's recommended condition to improve the existing parking lot to an asphalt surface for the safety of patrons at 7507 Masters Road.

Staff Recommendation

Staff recommends approval of the Specific Use Permit (SUP) to the Planning, Development and Zoning Commission based on the following conditions:

1. The property and facility will be governed by all the requirements in Section 77-50 of the Zoning Ordinance. These conditions are found in Section 77-50 (g) (4) and relates to hours of operation, lighting and safety.
2. The parking lot shall be improved with an asphalt surface approved by the City Engineer, before a Certificate of Occupancy is issued.
3. Provide striped parking spaces per Section 77-45, *Parking*, before a Certificate of Occupancy is issued.
4. The property owner shall comply with Section 77-51, *Plan Review*, *Landscaping, and Building Façade Requirements*, façade requirements when redevelopment or substantial improvement occurs on site.
5. The property owner shall comply with Section 77-36, *State Highway 6 Overlay (SH-6) District requirements,* when redevelopment or substantial improvement occurs on site.
6. No new freestanding light fixture shall be greater than 25-feet in height.
7. All new outdoor lighting shall be designated so that no light spillover onto abutting property exceeds 0.3 foot-candle when measured vertically.
8. A clear path for emergency vehicles shall be maintained at all times.
9. The request is for the use of internal space with no exterior modifications, any interior modifications will require life safety reviews by the Fire Marshal and Inspections through the Building Permit process.

Planning, Development and Zoning Commission Public Hearing

The Planning, Development and Zoning Commission held a public hearing on January 24, 2022. There was one speaker during the public hearing. Ms. Tanya Salinas, the applicant spoke in favor of her application. She stated the need for a small medical office at the location in the City of Manvel. She spoke about putting citizens health care as a number one priority and requested approval of the application. She aimed at increasing access to quality and available health care for the community.

Planning, Development and Zoning Commission Meeting Discussion

At the January 24, 2022, Planning, Development and Zoning Commission meeting, the discussion focused on the staff recommendations. This included the existing conditions of the parking lot and the need for an improved striped parking spaces. Commissioner Miller inquired whether staff discussed the recommendations with the applicant and staff responded that the recommendations were not discussed with the applicant. Other Commissioners also asked about the previous tenants of the building. Staff explained that the recommendations are based the pre-determined conditions for the type of SUP based on the Zoning Ordinance. A Commissioner stated that as a health care facility, the need for better paving conditions for wheel chairs is also necessary and important for this application. During the discussion, the Commission allowed Mr. Mark Lowe, property owner, to speak. Mr. Lowe questioned why he and the applicant were not informed of the staff recommendations ahead of time before the meeting, He questioned the staff recommendations for an improved parking lot with asphalt surface and cited the huge cost of asphalt improvement. He stated that staff is asking him to bear a huge cost for asphalt pavement and stressed his opposition to the recommendations.

Planning, Development, and Zoning Commission Recommendation

The Planning, Development and Zoning Commission voted four yeas to one nay in favor of the staff recommendations as proposed in Ordinance No. 2022-O-03.

City Council Public Hearing

The Notice of Public Hearing was published in the newspaper of general circulation. All property owners within 200 feet of the property were notified. At the time of writing this report, no information inquiries have been received and staff is not aware of opposition.

Exhibit 1
Application

21-4987

DEVELOPMENT SERVICES
20025 HIGHWAY 6
MANVEL, TX 77578
P: 281-489-0630
F: 281-489-0634

SPECIFIC USE PERMIT APPLICATION

PROJECT INFORMATION

Project Name: Infinity Family Clinic, PLLC
Project Location/Address: 7507 Masters Rd Ste B Manvel TX 77578
Legal Description: Lots 1, 2, 3, 4 and 5 of Block 20, Manvel Townsite, Brazoria County, Texas according to the map of plat thereof recorded in Volume 1, page 109 of the plat records of Brazoria County, Texas
Current Zoning: Light commercial Proposed Land Use: Medical Office NAICS No.: 6211
Parcel/Tax ID#(s): 228029 Total Acreage: 21,000 Square ft

APPLICANT INFORMATION

Applicant Name: Tanya Salinas
Company Name: Infinity Family Clinic, PLLC
Address: 7014 Limestone Cir. City: Manvel State: TX Zip: 77578
Phone #: 956-432-7805 (cell) Email: infinityfamilyclinic21@gmail.com

This is to certify that the information on this form is COMPLETE, TRUE, and CORRECT, and I, the undersigned, am authorized to make this application on behalf of the owner(s). I understand that this application will expire one year from the date submitted.

Applicant Signature (**REQUIRED**) Date 12/21/2021

PROPERTY OWNER INFORMATION

Owner(s) Name: Mark Lowe / Manvel Development Co. Inc.
Address: 20351 Hwy 6 P.O. Box 155 City: Manvel State: TX Zip: 77578
Phone #: 281-489-9444 Email: manvelrealty1@gmail.com

PROPERTY OWNER'S AUTHORIZATION **(Required – If owner is also the applicant, must sign as both)**:
I am the owner of the property for which this application is being made. I authorize the above person (Applicant) to submit this application and to correspond with the City of Manvel regarding this application on my behalf.

Owner's Signature (**REQUIRED**) Date 12/21/2021

Exhibit 2
Application

DEVELOPMENT SERVICES
20025 HIGHWAY 6
MANVEL, TX 77578
P: 281-489-0630
F: 281-489-0634

SUBMITTAL CHECKLIST

So that we may efficiently review your project in a timely manner, it is important that all required documents and fees listed on the "Submittal Checklist" below are submitted with your application. One or more of the required documents may be waived due to the nature of the development; however, it is incumbent upon the applicant to inquire about these exceptions for your project **before** submitting an application. Answers to specific use permit applications can be obtained by attending a pre-development meeting with our Development Review Committee (DRC) prior to submitting a formal application. Please call the phone number on the application to schedule an appointment. Submit application and accompanying documents to the Permits and Inspections at the address above Monday through Thursday between the hours of 7:30 a.m. and 5:30 p.m. and Friday between the hours of 7:30 a.m. and 11:30 a.m.

SPECIFIC USE PERMIT SUBMITTAL CHECKLIST ITEMS	REQUIRED (PLEASE CHECK)
Completed Specific Use Permit Application (with all signatures)	✓
Two (2) Copies of a Conceptual Plan (building, parking, landscaping, etc. locations)	V PICS
Two (2) Legal Descriptions of Property (metes & bounds description if not platted)	✓
Two (2) Copies of Recorded Plat (if platted)	NA
Two (2) Applicant Letters of Request	✓
Traffic Impact Analysis, (if applicable)	NA
Paid Application Fee	✓

APPLICANT CERTIFICATION

By signing below, I acknowledge that I have reviewed the Submittal Checklist and have included the required submittal items and reviewed them for completeness and accuracy. I also acknowledge that my application will be rejected if it is deemed incomplete.

Applicant Signature — Date: 12/21/2021

Exhibit 3
Authorization Letter

DEVELOPMENT SERVICES
20025 HIGHWAY 6
MANVEL, TX 77578
P: 281-489-0630
F: 281-489-0634

LETTER OF AUTHORIZATION

Have property owner complete and sign, if applicant differs from property owner.

Mark Lowe/Manvel Development Co. Inc.
Owner Name

20351 Hwy 6- P.O. Box 155
Owner Address

Manvel TX 77578
Owner City, State Zip

12/06/2024
Date

Building and Inspections
20025 Highway 6
Manvel, TX 77578

Dear City of Manvel Permits and Inspections,

I, Mark Lowe, certify that I am the owner of the project property located at 7507 Masters Rd Ste B and that the forgoing statements and answers made and all data, information, and evidence herewith submitted are in all respects to the best of my knowledge and belief, true, and correct. I appoint Tanya Sallinds with the company Infinity Family Clinic (if applicable) to act as my representative for this project. I agree to be responsible for payment of bills due to the City of Manvel related to this application. Furthermore, I understand that any material misrepresentation of this application, failure to comply with ordinances, and /or failure to remit payment for services can lead to delays in this project – up to and including rejecting the project and forfeiting any fees paid.
Please contact me directly at 281-489-9444 if you have any questions.

Sincerely,

Owner Name Mark Lowe

Owner Signature

3

Exhibit 4
Applicant's Letter

12/06/2021

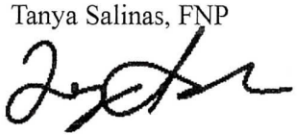
My name is Tanya Salinas and I am a licensed family nurse practitioner as well as a resident of Manvel, TX. I am requesting approval from the city to open a family practice at 7507 Masters Rd. Ste B. with my hours being Monday through Friday, 7:30 a.m. to 4:30 p.m.

I feel Manvel would greatly benefit from the healthcare services that I can provide as well as that bond and communication that will create lasting relationships of the patients in this community. Putting patient's health and wellbeing is my number one priority. What better place to have that small town family practice than the city of Manvel.

Thank you for your time and consideration as I look forward to serving the community for years to come.

Sincerely,

Tanya Salinas, FNP



12/06/2021

To whom it may concern;

My name is Julie Rodriguez and I am employed for Tanya Salinas, FNP as her office manager. I am kindly asking the city of Manvel to allow Tanya to open a family practice. Being from a small town in Alabama myself, I think Manvel would be the perfect spot. There is something about having that one on one connection with your healthcare provider rather than on office owned by a corporation. Tanya can provide that to this community.

I hope you consider and allow her to be an asset to Manvel and provide optimal care to everyone here.

Thank you.

Julie Rodriguez

Exhibit 5
Site Plan

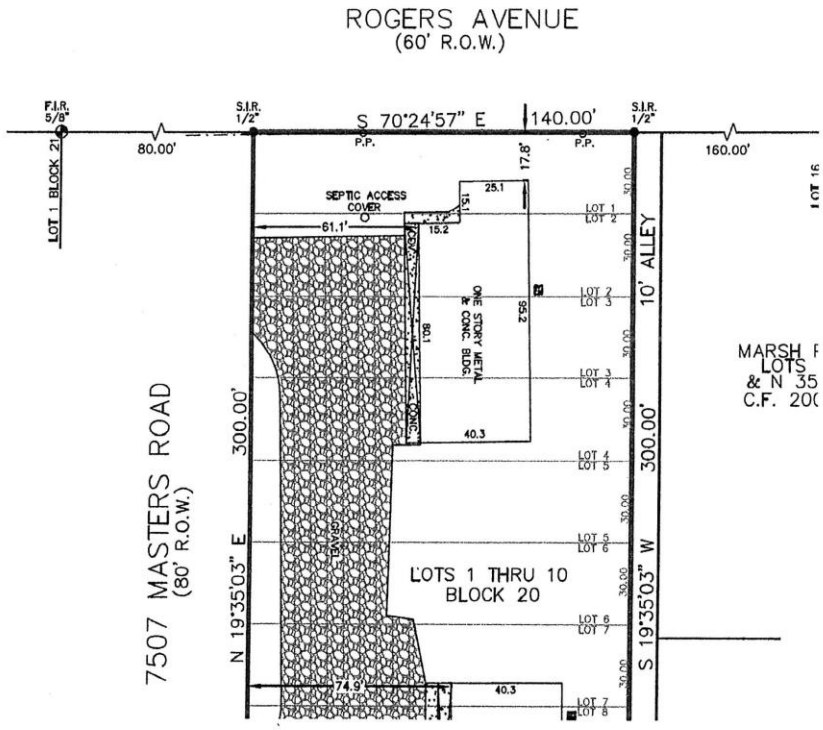


Exhibit 6
Site Plan

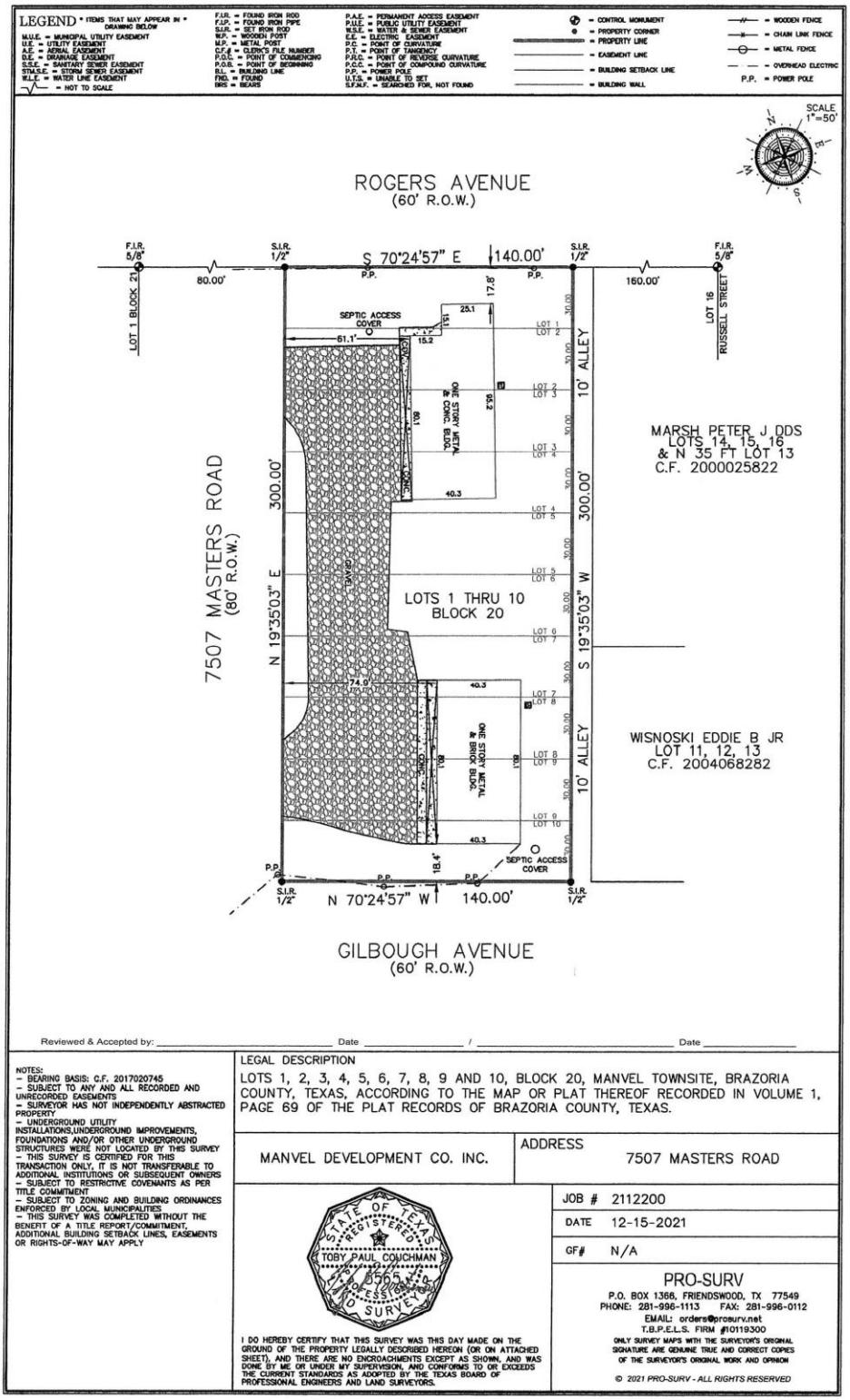


Exhibit 7
Subject Property

Exhibit 8
Subject Property and Adjacent Property

Exhibit 9
Unpaved frontage of Subject Property

Exhibit 10
Access to Subject Property

Exhibit 11
Subject Property and Surrounding Use

Exhibit 12
Public Hearing Notice

Public Hearing Notice on Sunday 01/09/2022

A PUBLIC HEARING WILL BE HELD AT MANVEL CITY HALL, 20031 HWY 6, MANVEL, TX 77578 AT 7:00 P.M. ON MONDAY, JANUARY 24, 2022, BEFORE THE MANVEL PLANNING, DEVELOPMENT AND ZONING COMMISSION AND AT 7:00 P.M. ON MONDAY, FEBRUARY 7, 2022, BEFORE THE MANVEL CITY COUNCIL TO HEAR INPUT FROM THE PUBLIC AN ORDINANCE OF THE CITY OF MANVEL, TEXAS, AMENDING THE ZONING CLASSIFICATION OF 21,000 SQUARE FEET LOCATED AT 7507 MASTERS ROAD, MANVEL, TEXAS, FROM LIGHT COMMERCIAL DISTRICT/STATE HIGHWAY 6 OVERLAY DISTRICT (LC/SH6) TO LIGHT COMMERCIAL DISTRICT/STATE HIGHWAY 6 OVERLAY DISTRICT WITH SPECIFIC USE PERMIT (LC/SH6-SUP); PROVIDING FOR THE GRANTING OF A SPECIFIC USE PERMIT WITH CONDITIONS TO AUTHORIZE THE USE OF PROPERTY FOR NAICS USE 621111 "OFFICES OF PHYSICIANS (EXCEPT MENTAL HEALTH SPECIALISTS"; PROVIDING FOR THE AMENDMENT OF THE CITY'S OFFICIAL ZONING MAP; PROVIDING SEVERABILITY; AND PROVIDING A PENALTY IN AN AMOUNT NOT TO EXCEED $2,000 FOR EACH DAY OF VIOLATION OF ANY PROVISION HEREOF.

ORDINANCE NO. 2022-O-03

AN ORDINANCE OF THE CITY OF MANVEL, TEXAS, AMENDING THE ZONING ORDINANCE OF THE CITY, BY AMENDING THE ZONING CLASSIFICATION OF 21,000 SQUARE FEET LOCATED AT 7507 MASTERS ROAD, MANVEL, TEXAS, FROM LIGHT COMMERCIAL DISTRICT/STATE HIGHWAY 6 OVERLAY DISTRICT (LC/SH6) TO LIGHT COMMERCIAL DISTRICT/STATE HIGHWAY 6 OVERLAY DISTRICT WITH SPECIFIC USE PERMIT (LC/SH6-SUP); PROVIDING FOR THE GRANTING OF A SPECIFIC USE PERMIT WITH CONDITIONS TO AUTHORIZE THE USE OF PROPERTY FOR NAICS USE 621111 "OFFICES OF PHYSICIANS (EXCEPT MENTAL HEALTH SPECIALISTS)"; PROVIDING FOR THE AMENDMENT OF THE CITY'S OFFICIAL ZONING MAP; PROVIDING SEVERABILITY; AND PROVIDING A PENALTY IN AN AMOUNT NOT TO EXCEED $2,000 FOR EACH DAY OF VIOLATION OF ANY PROVISION HEREOF.

* * * * * * * * * * *

WHEREAS, Manvel Development Co. Inc. is the owner (the "Owner") of a certain 12,000 square foot tract of land located at 7507 Masters Road, Manvel, Texas, such tracts being Lots 1, 2, 3, 4, and 5, Block 20, Manvel Townsite, Brazoria County, Texas; a map and description of which is attached hereto as Exhibit "A"; and

WHEREAS, the 21,000 square foot tract is currently zoned Light Commercial District/State Highway 6 Overlay District (LC/SH6); and

WHEREAS, Infinity Family Clinic LLC, the property lessee, has filed an application to change the zoning classification of the 21,000 square foot tract Light Commercial District/State Highway 6 Overlay District with Specific Use Permit (LC/SH6-SUP), allowing use of the Property for NAICS Use No. 621111 – "Offices of Physicians (Except Mental Health Specialist"; and

WHEREAS, the Planning, Development, and Zoning Commission and the City Council have conducted, in the time and manner required by law and the Zoning Ordinance of the City, a public hearing on such request; and

WHEREAS, the Planning, Development, and Zoning Commission has recommended in its report the approval of such request, and the City Council deems it appropriate to approve said amendment to the rezoning and specific use permit; now, therefore,

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MANVEL, TEXAS:

Section 1. The facts and matters set forth in the preamble of this Ordinance are hereby found to be true and correct.

Section 2. The zoning classification of a certain 21,000 square foot tract of land located at 7507 Masters Road, Manvel, Texas, being a tract of land containing 21,000 square feet situated in the Lots 1, 2, 3, 4, and 5, Block 20, Manvel Townsite, Brazoria County, Texas, as more particularly described in Exhibit "A" attached hereto, shall be changed from Light Commercial District/State Highway 6 Overlay District (LC/SH6) to Light Commercial District/State Highway 6 Overlay District with Specific Use Permit (LC/SH6-SUP), for uses as permitted within such zone classification, subject to the regulations, regulations, and conditions hereinafter set forth:

1. Office of Physicians (Except Mental Health Specialists) - (NAICS 621111)

Section 3. The request meets the criteria set forth in Section 77-50 of the City of Manvel Zoning Ordinance for a Specific Use Permit. The City of Manvel Zoning Ordinance is hereby further amended by granting an amended Specific Use Permit authorizing use of the Property for the additional NAICS use listed in Section 2, above.

Section 4. The City Council hereby finds it appropriate to impose the conditions to the granting of the Specific Use Permit as shown in Exhibit "B", attached hereto and incorporated herein as if set out in full. Use and Development of the Property shall comply with the conditions and with the site plan as shown in Exhibit "C", attached hereto. The use and site may not be changed or expanded except by amendment of this Specific Use Permit.

Section 5. The Specific Use Permit issued under this ordinance, or a specific use listed herein, shall expire one year after its date of issuance if construction or if the listed use authorized hereunder is not substantially under way or in use prior to the expiration of said one-year period. If, prior to the expiration of such one-year period, the owner of the property to which the Specific Use Permit applies in writing, for an extension, the City Council may, after recommendation from the Planning, Development, and Zoning Commission, grant such extension for one additional year.

Section 6. The Zoning District Map of the City of Manvel shall be revised and amended to show the designation of said multiple tracts, as described and as provided in Section 2, above, with the appropriate reference thereon to the number and effective date of this Ordinance and a brief description of the nature of the change.

Section 7. The City Council hereby finds and determines that said rezoning comports to the City's Comprehensive Land Use Plan. This Ordinance shall in no manner amend, change, supplement, or revise any provision of any ordinance of the City of Manvel, save and except the change in zoning classification of said tract(s) as described above.

Section 8. In the event any section, paragraph, subdivision, clause, phrase, provision, sentence, or part of this Ordinance or the application of the same to any person or circumstance shall for any reason be adjudged invalid or held unconstitutional by a court of competent

jurisdiction, it shall not affect, impair, or invalidate this Ordinance as a whole or any part or provision hereof other any part or provision hereof other than the part declared to be invalid or unconstitutional; and the City Council of the City of Manvel, Texas, declares that it would have passed each and every part of the same notwithstanding the omission of any and every part of the same notwithstanding the omission of any such part thus declared to be invalid or unconstitutional, or whether there be one or more parts.

Section 9. Any person who shall intentionally, knowingly, recklessly or with criminal negligence violate any provision of this Ordinance shall be deemed guilty of a misdemeanor and upon conviction, shall be fined in an amount not to exceed $2,000.00. Each day of violation shall constitute a separate offense.

Section 10. Revocation. This Specific Use Permit may be revoked or modified by the City Council, in whole or in part, after notice and hearing, for either of the following reasons:

(1) The Specific Use Permit was obtained or extended by misrepresentation, fraud or deception: or

(2) That one of more of the conditions imposed by the permit has not been met or has been violated.

PASSED AND APPROVED on first reading this _____ day of _____, 2022.

PASSED, APPROVED, AND ADOPTED on second and final reading this _____ day of _____, 2022.

_____
Debra Davison, Mayor

ATTEST:

_____
Tammy Bell, City Secretary

APPROVED AS TO FORM:

_____
Robert Gervais, City Attorney

Exhibit A

Being a tract of land containing Lots 1, 2, 3, 4, and 5, Block 20, Manvel Townsite, Brazoria County Texas.

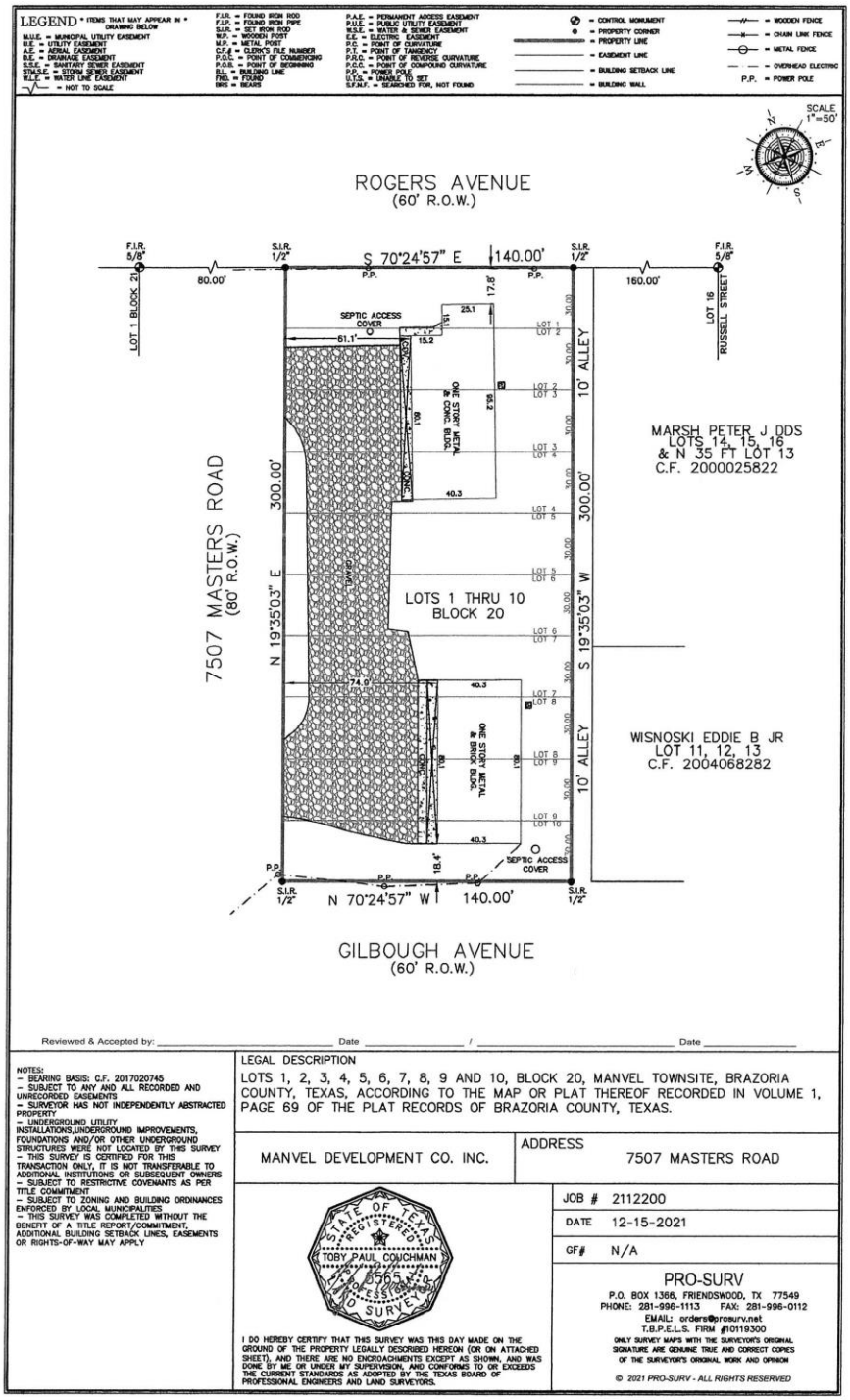


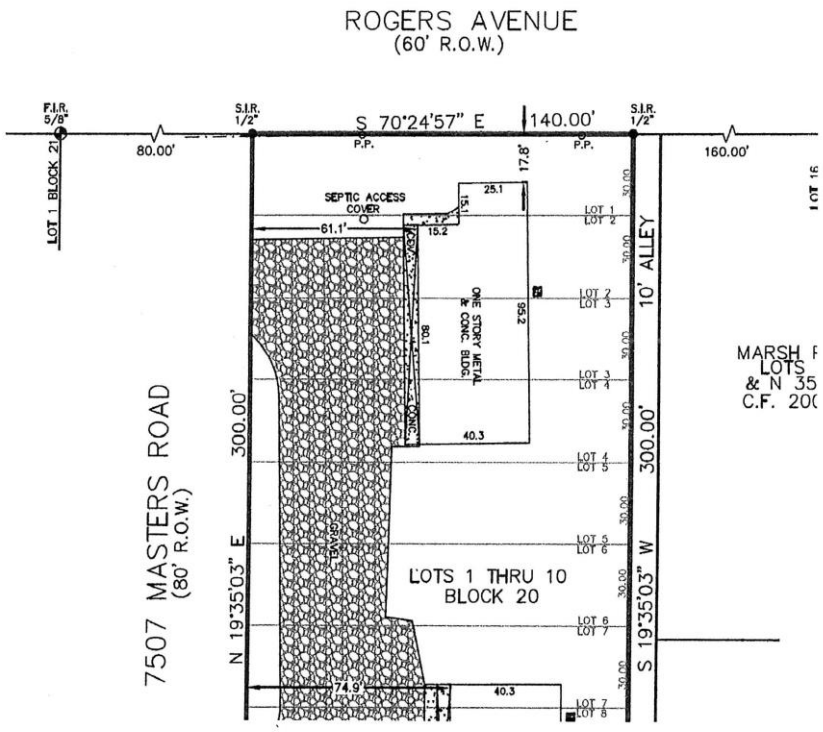
Exhibit B

CONDITIONS FOR MEDICAL OFFICE USE

GENERAL:

1. The property and facility will be governed by all the requirements in Section 77-50 of the Zoning Ordinance. These conditions are found in Section 77-50 (g) (4) and relates to hours of operation, lighting and safety.
2. The parking lot shall be improved with an asphalt surface approved by the City Engineer, before a Certificate of Occupancy is issued.
3. Provide striped parking spaces per Section 77-45, Parking, before a Certificate of Occupancy is issued.
4. The property owner shall comply with Section 77-51, *Plan Review, Landscaping, and Building Façade Requirements*, façade requirements when redevelopment or substantial improvement occurs on site.
5. The property owner shall comply with Section 77-36, *State Highway 6 Overlay (SH-6) District requirements*, when redevelopment or substantial improvement occurs on site.
6. No new freestanding light fixture shall be greater than 25-feet in height.
7. All new outdoor lighting shall be designated so that no light spillover onto abutting property exceeds 0.3 foot-candle when measured vertically.
8. A clear path for emergency vehicles shall be maintained at all times.
9. The request is for the use of internal space with no exterior modifications, any interior modifications will require life safety reviews by the Fire Marshal and Inspections through the Building Permit process.

Exhibit C


ROGERS AVENUE
(60' R.O.W.)
F.I.R. 5/8"
S.I.R. 1/2"
S 70°24'57" E
140.00'
S.I.R. 1/2"
80.00'
P.P.
P.P.
160.00'
LOT 1 BLOCK 21
SEPTIC ACCESS COVER
25.1
17.8'
15.1'
61.1'
15.2
ONE STORY METAL & CONC. BLDG.
56.2
10.1
40.3
7507 MASTERS ROAD
(80' R.O.W.)
300.00'
N 19°35'03" E
LOTS 1 THRU 10
BLOCK 20
10' ALLEY
300.00'
S 19°35'03" W
74.9'
40.3
LOT 1
LOT 2
LOT 2
LOT 3
LOT 3
LOT 4
LOT 4
LOT 5
LOT 5
LOT 6
LOT 6
LOT 7
LOT 7
LOT 8
30.00'
MARSH
LOTS
& N 35
C.F. 20

ORDINANCE NO. 2022-O-05

AN ORDINANCE OF THE CITY OF MANVEL, TEXAS, AMENDING CHAPTER 50. *PLANNING AND DEVELOPMENT*, ARTICLE III. *COMPREHENSIVE PLAN*, BY APPROVING THE 2022 MASTER WASTEWATER PLAN UPDATE DOCUMENT AS THE 2022 MASTER WASTEWATER PLAN; AMENDING SECTION 50-55. *MASTER WASTEWATER PLAN* INTEGRATING THE CITY'S 2022 MASTER WASTEWATER PLAN INTO THE CITY'S COMPREHENSIVE PLANS; PROVIDING FOR CONFORMITY OF ALL WASTEWATER REGULATIONS TO THE MASTER WASTEWATER PLAN; PROVIDING A PENALTY IN AN AMOUNT NOT TO EXCEED $2,000.00 PER DAY FOR EACH DAY OF VIOLATION OF ANY PROVISION HEREOF; AND PROVIDING FOR SEVERABILITY; AND PROVIDING A SEVERANCE CLAUSE AND EFFECTIVE DATE.

WHEREAS, in 2017 the City of Manvel approved a new master wastewater plan for the city; and

WHEREAS, in 2020 the city commissioned a master wastewater plan update to be prepared by Freese & Nichols; and

WHEREAS, the master wastewater plan update is now in final form and has been presented to the City for adoption; and

WHEREAS, the City Council hereby adopts the 2022 Master Wastewater Plan Update document prepared by Freese & Nichols as the new 2022 Master Wastewater Plan, and integrates it into Chapter 50 of The City Code as a plan and policy for the city; **now, therefore,**

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MANVEL, TEXAS:

Section 1. Chapter 50. *Planning and Development* of the Code of Ordinances of the City of Manvel is hereby amended by adopting a new master wastewater plan and amending section 50-55. *Master wastewater plan* in Article III to read and provide as follows:

"**CHAPTER 50. PLANNING AND DEVELOPMENT**

. . .

ARTICLE III. COMPREHENSIVE PLAN

. . .

Sec. 50-55. Master wastewater plan.

(a) The city council hereby adopts the [~~2017~~] 2022 Master Wastewater Plan ("Master Wastewater Plan"), a true and correct copy of which shall remain on file in the office of the city secretary. The Master Wastewater Plan shall be the plan and policy for wastewater matters within the city and, to the extent permitted by law, the extra-territorial jurisdiction of the City of Manvel.

(b) All wastewater and related regulations and requirements of The City Code, including, but not limited to, Chapter 62. *Subdivisions,* shall conform to the Master Wastewater Plan. If there is any conflict between an ordinance, rule or regulation of The City Code and the Master Wastewater Plan, the Master Wastewater Plan shall control."

Section 2. Penalty. Any person who shall intentionally, knowingly, recklessly, or with criminal negligence violate any provision of this chapter shall be deemed guilty of a misdemeanor and, upon conviction, shall be fined in an amount not to exceed $2,000.00. Each day of violation shall constitute a separate offense.

Section 3. **Repealer**. All ordinances or parts of ordinances inconsistent or in conflict herewith, are, to the extent of such inconsistency or conflict, hereby repealed.

Section 4. **Severability**. In the event any clause, phrase, provision, sentence, or part of this Ordinance or the application of the same to any person or circumstance shall for any reason be adjudged invalid or held unconstitutional by a court of competent jurisdiction, it shall

not affect, impair, or invalidate this Ordinance as a whole or any part or provision hereof other than the part declared to be invalid or unconstitutional; and the City Council of the City of Manvel, Texas, declares that it would have passed each and every part of the same notwithstanding the omission of any such part thus declared to be invalid or unconstitutional, whether there be one or more parts.

PASSED AND APPROVED on first reading this _____ day of _____, 2022.

PASSED, APPROVED, AND ADOPTED on second and final reading this _____, 2022.

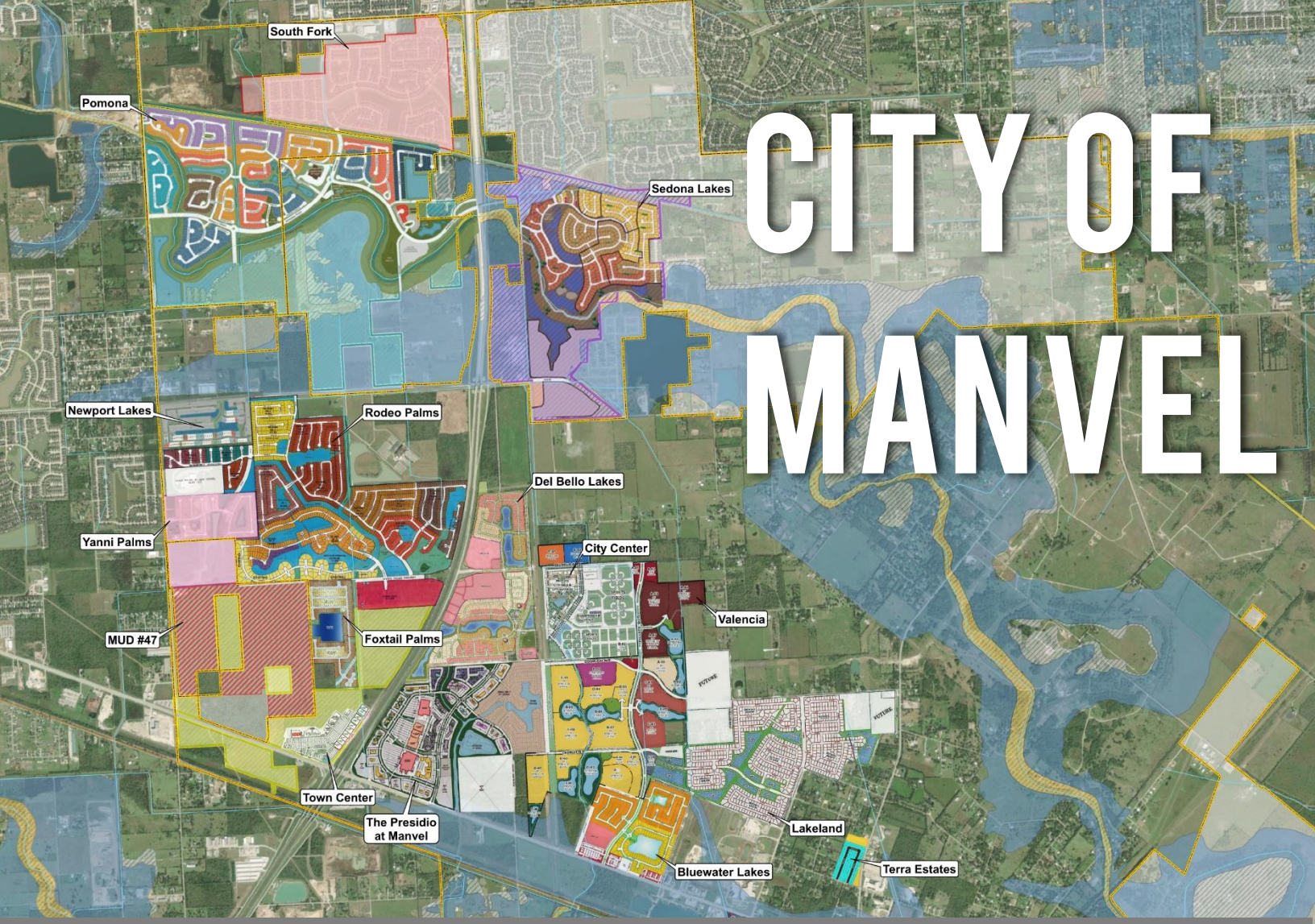
_____
Debra Davison, Mayor

Attest:

_____
Tammy Bell, City Secretary

APPROVED AS TO FORM:

_____
Robert Gervais, City Attorney



CITY OF MANVEL

2022 MASTER WASTEWATER PLAN UPDATE

PREPARED FOR:

City of Manvel

PREPARED BY:

Freese and Nichols, Inc.
11200 Broadway St., Suite 2320
Pearland, Texas 77584
832-456-4700

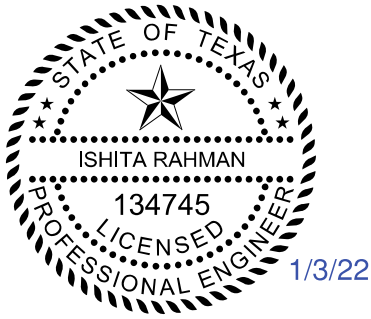
Innovative approaches
Practical results
Outstanding service

2022 MASTER WASTEWATER PLAN UPDATE

Prepared for:

City of Manvel

FREESE AND NICHOLS, INC.
TEXAS REGISTERED
ENGINEERING FIRM
F-2144



FREESE AND NICHOLS, INC.
TEXAS REGISTERED
ENGINEERING FIRM
F-2144

Prepared by:

FREESE AND NICHOLS, INC.
11200 Broadway St, Suite 2320
Pearland, Texas 77584
832-456-4700

FNI Project No.: MNV20623

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EXECUTIVE SUMMARY

1.0 INTRODUCTION

The City of Manvel (City) is located on Highway 6 east of State Highway (SH) 288, in northern Brazoria County, Texas. The City currently provides wastewater service to 1,635 equivalent single family connections (ESFCs) within the city limits. There are also approximately 5,148 existing ESFCs outside the City's existing wastewater served area. Manvel is experiencing a rapid growth within the city limits and extraterritorial jurisdiction (ETJ) and is anticipating an increase in the wastewater service area ESFCs to approximately 32,000. This will result in approximately 10 MGD of total average daily flow in the future wastewater service area.

The City completed a *Master Wastewater Plan* in 2017 that developed wastewater system improvements recommendations. As the growth and development patterns change in the City, Manvel identified the need to update to the *2017 Master Wastewater Plan*. Freese and Nichols, Inc. (FNI) was retained by the City of Manvel in 2020 to update the City's existing *Master Wastewater Plan* incorporating recent updates to the City's land use projections. The purpose of this *2022 Master Wastewater Plan Update* is to provide the City of Manvel with an updated planning tool that will serve as a guide for short-term and long-term (20-year) improvements to the wastewater collection system and treatment infrastructure. The results from this study were utilized during the 2021 water and wastewater impact fee update study for Manvel.

2.0 EXISTING WASTEWATER SYSTEM INFRASTRUCTURE

The City of Manvel owns and operates a wastewater collection system consisting of eight lift stations and associated force mains, a network of manholes and gravity mains, and one wastewater treatment plant (at Corporate Drive). The City recently constructed an expansion to increase the total average annual daily flow (AADF) treatment capacity at this plant to 0.5 MGD, and to increase the peak 2-hour flow capacity to 1,389 gpm (2.0 MGD). This expansion is permitted under the City's current Texas Pollutant Discharge Elimination System (TPDES) permit no. WQ0013872001.

In addition to the City of Manvel (Corporate Drive) wastewater treatment plant, there are four existing Municipal Utility District (MUD) WWTPs within the city limits and ETJ that serve the **Southfork**, **Sedona Lakes**, **Pomona**, **Rodeo Palms**, **Foxtail Palms**, **Newport Lake Estates**, and **Yanni Palms** developments.

3.0 LAND USE AND GROWTH PROJECTIONS

As of 2021, there are approximately 1,635 wastewater equivalent single family connections (ESFCs) currently served by the City's wastewater collection system. These represent residential and commercial wastewater customers. Each ESFC represents a wastewater flow (gallons/day) that must be conveyed and treated by the wastewater system. The City utilizes ESFCs to project wastewater flows and to determine the sizing and location of wastewater system infrastructure. FNI worked with City staff to develop growth projections for the City of Manvel and also utilized information collected from the existing and upcoming developments within the city limits and ETJ.

The growth in residential and commercial wastewater connections will inform the location, sizing, and timing of future wastewater infrastructure. FNI received information on projected ESFCs from the City, developers, and reports for the anticipated developments. The developers of each anticipated development supplied projected buildout connections and an approximate growth per year. For developments where a phasing plan was unavailable, FNI worked with the City staff to develop growth assumptions. In addition to the anticipated developments, growth projections were also developed for select areas within the wastewater service area identified as having potential for growth (infill areas) within the 20-year planning period. The total projected wastewater ESFCs for the **existing**, **5-year**, **10-year**, and **20-year** planning periods are shown in **Table ES-1**.

Table ES-1: Projected Wastewater ESFCs

Year	Projected Wastewater ESFCs		
	City Limits	ETJ	Total
2021	3,628[(1)]	3,155	6,783
2026	8,904	5,876	14,780
2031	13,311	6,530	19,841
2041	25,412	6,541	31,953

(1) Includes existing wastewater connections in developments within city limits that are not currently served by the City.

4.0 WASTEWATER FLOWS

Planning for future wastewater infrastructure is dependent on the amount of average daily and peak wastewater flow that must be collected, conveyed, and treated. Wastewater treatment plants are sized

based on average daily flows, while the collection system infrastructure, including lift stations, is sized to convey peak wastewater flows.

The City's existing wastewater system consists of a single wastewater service area that collects wastewater flows and conveys them to the City of Manvel (Corporate Drive) WWTP. For the City's future wastewater system, FNI delineated six distinct wastewater service areas that will each convey wastewater flows to regional wastewater treatment facilities. These six wastewater service areas are:

1. Central Wastewater Service Area
2. East Wastewater Service Area
3. West Wastewater Service Area
4. Sedona Lakes Wastewater Service Area
5. South Wastewater Service Area
6. Meridiana Wastewater Service Area (the portion of Meridiana within Manvel city limits)

The City of Manvel's design criteria for average daily wastewater flow per equivalent single family connection (ESFC) is 315 gallons. This was utilized to calculate average day wastewater flows during this study. For peak wet weather flows, FNI recommends using a peaking factor of 4.0, based on TCEQ guidelines in the absence of site specific data (30 TAC §217.32 (a)(2)). The planning criteria used for developing average day and peak wastewater flows for this *2022 Master Wastewater Plan Update* are shown in **Table ES-2**.

Table ES-2: Wastewater Flow Design Criteria

Wastewater Connection Unit	Average Day Wastewater Flow	Peak Wastewater Flow
ESFC (1)	315 gallons per day	4.0 x 315 gallons per day

(1) Equivalent Single Family Connection

FNI calculated future wastewater flows based on the projected equivalent single family connections and wastewater flow design criteria. The total projected average day and peak wet weather wastewater flows for each planning year are shown in **Table ES-3**.

Table ES-3: Projected Wastewater Flows

Year	Projected Wastewater ESFCs			Average Daily Flow (ADF) (MGD)			Peak Wet Weather Flow (MGD)		
	City Limits	ETJ	Total	City Limits	ETJ	Total	City Limits	ETJ	Total
2021	3,628[(1)]	3,155	6,783	1.14	0.99	2.1	4.57	3.98	8.5
2026	8,904	5,876	14,780	2.80	1.85	4.7	11.22	7.40	18.6
2031	13,311	6,530	19,841	4.19	2.06	6.2	16.77	8.23	25.0
2041	25,412	6,541	31,953	8.00	2.06	10.1	32.02	8.24	40.3

(1) Includes existing wastewater connections in developments within city limits that are not currently served by the City.

5.0 WASTEWATER MODEL UPDATE

The City's existing wastewater hydraulic model was developed by FNI during the *2017 Master Wastewater Plan* using InfoSewer® software by Innovyze. This software has Geographic Information System (GIS) interoperability and makes use of engineering equations and mathematical algorithms to determine the flows and velocities that would occur in a collection system under a specified set of conditions. During this study, the model was updated with recently completed wastewater infrastructure and updated wastewater flow projections. The updated model was utilized during the development of collection system capital improvement projects to improve the existing system and accommodate projected wastewater flows through 2041.

6.0 WASTEWATER SYSTEM ANALYSES

FNI developed wastewater system improvements to accommodate the projected flows from residential and commercial growth. Hydraulic analyses were conducted to develop these improvements into a phased capital improvements plan to convey and treat the projected wastewater flows over the 20-year period through 2041. In order to serve the projected 20-year growth and develop regionalized wastewater treatment facilities, the City of Manvel should consider the following:

- Construct a new phased Central wastewater treatment plant that would expand the treatment capacity in the Central region. This new Central WWTP would be phased over time to accommodate the anticipated 20-year growth in wastewater flows (this project currently in preliminary design phase)

- Construct regional transfer infrastructure to pump wastewater flows from the East Service Area to the Central Service Area
- Construct a new wastewater treatment plant in the South service area
- Construct consolidation infrastructure and expand treatment capacity in the West Service Area
- Extend wastewater service via gravity lines, lift stations, and force mains to areas of growth where little or no infrastructure currently exists

Recommended capacities were developed for the regional wastewater treatment and conveyance infrastructure based on the 20-year projected average day wastewater flows presented in **Table ES-3**.

Table ES-4 presents a summary of the existing and proposed City of Manvel wastewater treatment facilities including the MUD WWTPs and permitted capacities by planning period. The Meridiana and Sedona Lakes service areas currently have existing MUD WWTPs, which are anticipated to eventually be part of the City's wastewater system.

Table ES-4: WWTP Capacities by Planning Period

Planning Period	Average Daily Flow Permitted Capacity (MGD)								
	Central Regional WWTP[1]	West Regional WWTP[1]	South Regional WWTP[1]	Town Center WWTP[1]	Sedona Lakes WWTP[2][4]	Meridiana WWTP[2][4]	Rodeo Palms WWTP[2][5]	Pomona WWTP[2][6]	Southfork WWTP[2][6]
2021	0.5	-	-	-	0.3	0.399	0.45	0.25	0.48
2026	1.5	-	-	0.15[7]	0.6	by MUD	by MUD	by MUD	by MUD
2031	2.0[3]	-	-	by MUD	0.6	by MUD	by MUD	by MUD	by MUD
2041	4.0	4.0	1.1	*Decommissioned and Flow Transferred to West WWTP*	0.6	by MUD	*Ownership Transfer to City as West Regional WWTP*	*Decommissioned and Flow Transferred to West WWTP*	*Decommissioned and Flow Transferred to West WWTP*

(1) City-owned WWTPs
(2) MUD WWTPs not currently owned and operated by the City.
(3) Decommission the existing 0.5 MGD package plant.
(4) Sedona Lakes WWTP and Meridiana WWTP are planned to be owned by the City in future (beyond 2041)
(5) Rodeo Palms Brazoria County MUD #29 WWTP ownership and operation to be transferred to the City as the West Regional WWTP.
(6) Pomona WWTP and Southfork WWTP are recommended to be decommissioned and served by the West Regional WWTP by 2041.
(7) Town Center WWTP is under construction as of December 2021.

7.0 WASTEWATER TREATMENT PLANT EFFLUENT REUSE

The City of Manvel does not currently have a wastewater reuse system. As the City continues to grow, the water demand on the City's existing and future potable water sources will continue to increase. The City is considering a wastewater reuse system to alleviate the need for additional water supply as the projected population and water demands increase. As part of the *2022 Master Wastewater Plan Update*, FNI summarized the steps involved in the implementation of a reuse program.

The steps include identifying reuse system goals, reuse options, reuse considerations, compliance with reuse regulations, reuse water quality and quantity. FNI recommends the City to perform an in-depth Reuse Study to evaluate the options for potential potable and non-potable reuse. If the City decides to implement reuse, the wastewater treatment facilities will need to be upgraded to produce effluent at the required water quality standards.

8.0 WASTEWTER SYSTEM CAPITAL IMPROVEMENTS PLAN

A wastewater system capital improvements plan (CIP) was developed for the City of Manvel. The CIP projects consist of collection system conveyance and wastewater treatment for the projected growth over the 20-year planning period in this study. These projects allow for regionalization of the City's wastewater collection system and treatment infrastructure and provide the City with a phased CIP for collection system and treatment as the City grows.

Capital costs were calculated for all recommended improvements and do not include individual service connections or subdivision lines. The costs are provided as estimates based on previous similar engineering experience in 2021 dollars and include allowances for contingencies and engineering and surveying.

Table ES-5 summarizes the cost of the Capital Improvements Plan by phase and project type (Treatment or Conveyance). **Table ES-6** summarizes the individual projects in the wastewater system CIP.

Table ES-5: Wastewater CIP Summary (by Phase and Project Type)

Phase	CIP	Cost
5 Year (by 2026)	Treatment	$26,948,900
	Conveyance	$14,801,800
	Sub-total	**$41,750,700**
10 Year (by 2031)	Treatment	$15,904,500
	Conveyance	$1,555,200
	Sub-total	**$17,459,700**
20-Year (by 2041)	Treatment	$98,182,000
	Conveyance	$59,758,700
	Sub-total	**$157,940,700**
Total 20-Year Wastewater CIP Cost		**$217,151,100**

Table ES-6: Wastewater Capital Improvements Plan Summary (by Project)

Phase	Project Number	Project Name	Cost (In 2021 Dollars)
5-Year (by 2026)	1	1.0 MGD Central Regional Wastewater Treatment Plant (Phase 1)	$26,948,900
	2	New 4.0 MGD Pollard Blvd Lift Station and 18-inch Force Main (Phase 1)	$5,494,800
	3	12/15/18/30-inch Lines through Valencia Development (Central Service Area Interceptor and Gravity System)	$8,553,200
	4	8-inch Gravity Main along McCoy Road and Lewis Lane	$753,800
		Total 2021 - 2026	**$41,750,700**
10-Year (by 2031)	5	Expansion of the Central Regional Wastewater Treatment Plant to 2.0 MGD Capacity (Phase 2)	$15,904,500
	6	12-inch Del Bello SPUR Gravity Main	$1,555,200
		Total 2027 - 2031	**$17,459,700**
20-Year (by 2041)	7	15-inch Gravity Main Along Masters Road	$1,796,700
	8	Large Avenue Lift Station Expansion to 1.8 MGD and 10-inch Force Main	$3,211,800
	9	New 1.1 MGD South Regional Wastewater Treatment Plant (Phase 1)	$26,688,000
	10	Expansion of the Central Region Wastewater Treatment Plant to 4.0 MGD Capacity (Phase 3)	$30,840,000
	11	New Pollard Boulevard Lift Station Expansion to 6.5 MGD	$2,150,100
	12	Del Bello Lift Station Expansion to 1.3 MGD	$582,500
	13	15/24-inch South Region Gravity Main	$6,069,700
	14	12/15-inch Central Region Gravity Main	$2,442,600
	15	New 4.0 MGD East Regional Lift Station and 14-inch Force Main	$8,877,000
	16	12-inch Gravity Main along Highway 6	$2,071,000
	17	West Regional Wastewater Treatment Plant Expansion to 4.0 MGD	$40,654,000
	18	West Service Area Wastewater Treatment Plant Consolidation and Gravity Main (Phase 1)	$18,201,600
	19	West Service Area Wastewater Treatment Consolidation (Phase 2)	$3,954,300
	20	21/24-inch Gravity Main along Mustang Bayou	$6,224,300
	21	New 1.0 MGD Lift Station, 8-inch Force Main and 15-inch Gravity Line	$4,177,100
		Total 2032 - 2041	**$157,940,700**
		Total Capacity Wastewater CIP Cost	**$217,151,100**

1.0 INTRODUCTION

The City of Manvel (City) is located on Highway 6 east of State Highway (SH) 288, in northern Brazoria County, Texas. The City currently provides wastewater service to 1,635 equivalent single family connections (ESFCs) within the city limits. There are also approximately 5,148 existing ESFCs outside the City's existing wastewater served area. Manvel is experiencing a rapid growth within the city limits and extraterritorial jurisdiction (ETJ) and is anticipating an increase in the wastewater service area ESFCs to approximately 32,000. This will result in approximately 10 MGD of total average daily flow in the future wastewater service area.

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1.1 SCOPE OF WORK

The goals of the *2022 Master Wastewater Plan Update* were to incorporate the new City Center and more recent projections from existing and proposed developments, conduct wastewater system analyses, and update wastewater system improvement recommendations for collection system and treatment projects. The major elements of the scope of this project included:

- Update Connection and Wastewater Flow Projections
- Conduct Hydraulic Analyses and Wastewater System Evaluation
- Develop Wastewater System Capital Improvements Plan (CIP) and prepare a Master Plan Report

1.2 LIST OF ABBREVIATIONS

Table 1-1: List of Abbreviations

Abbreviation	Actual
AADF	Average Annual Daily Flow
ADF	Average Daily Flow
$CBOD_5$	5-Day Carbonaceous Biochemical Oxygen Demand
CIP	Capital Improvement Plan
DMR	Daily Monitoring Reports
ETJ	Extraterritorial Jurisdiction
ECHO	Enforcement and Compliance History Online
ESFC	Equivalent Single Family Connection
FM	Farm to Market
FNI	Freese and Nichols, Inc.
ft	foot
GIS	Geographic Information System
gpm	Gallons per Minute
Hwy	Highway
I/I	Inflow and Infiltration
LF	Linear Feet
LS	Lift Station
MGD	Million Gallons per Day
MUD	Municipal Utility District
OPCC	Opinion of Probable Construction Cost
PVC	Polyvinyl Chloride
SH	State Highway
TCEQ	Texas Commission on Environmental Quality
TIN	Triangular Irregular Network
TPDES	Texas Pollutant Discharge Elimination System
WWTP	Wastewater Treatment Plant

2.0 EXISTING WASTEWATER SYSTEM INFRASTRUCTURE

The City of Manvel's existing wastewater collection system consisting of eight (8) lift stations and associated force mains, a network of manholes and gravity mains, and one wastewater treatment plant (WWTP). Manvel's existing wastewater system infrastructure in shown on **Figure 2-1**.

2.1 CITY OF MANVEL WASTEWATER TREATMENT PLANT

The City of Manvel owns and operates a 0.5 MGD WWTP located at 7315 Corporate Drive north of Highway 6. The plant effluent outfalls into Brazoria County Flood Control Ditch No. 12, which then flows to Chocolate Bayou. The City completed an expansion at this WWTP in 2019 that increased the total average annual daily flow (AADF) treatment capacity to 0.5 MGD from 0.25 MGD and increased the peak 2-hour flow capacity to 1,389 gpm (2.0 MGD). This expansion is permitted under the City's current Texas Pollutant Discharge Elimination System (TPDES) permit no. WQ0013872001 provided as **Appendix C**.

Table 2-1: City of Manvel Wastewater Treatment Plant Information

WWTP Name - TPDES Permit No.	Phase	ADF[(1)] Permit (MGD)	Peak 2-Hour[(1)] Permit (MGD)	Peaking Factor	Discharge Water(s) [(1)]
City of Manvel - WQ0013872001	-	0.50	2.0	4.0	Brazoria County Flood Control Ditch No. 12; thence to Chocolate Bayou Above Tidal in Segment No. 1108 of the San Jacinto River Basin

(1) ADF = Average Daily Flow; Permitted flow and discharge information from TCEQ TPDES Permits.

2.2 LIFT STATIONS

The City completed construction of two new lift stations and one lift station improvement and relocation since 2017. FNI received the as-built plans for these three lift stations from the City and compiled all available information to update City's lift station inventory. A summary of the known information is presented in **Table 2-2**. The full lift station inventory is included in **Appendix B**.

Table 2-2: Existing Lift Stations

Lift Station Name (No.)	No. of Pumps	Firm Capacity (gpm)	Horse Power	TDH (ft)	Wet Well Diameter (ft)	Wet Well Depth (ft)
Corporate Drive (No. 1) *WWTP Influent Lift Station*	3	950	10	67	8	19.6
McCoy Road (No. 3)	2	317	2	45	3	10
Large Avenue[a] (No. 4)	2	300	15	49	8	24.2
Rogers Road (No. 5)	2	433	10	79	10	23
Lewis Lane (No. 6)	2	200	5	30.5	10	24
Lakeland[b] (No. 7) *In Lakeland Subdivision*	3	550[c] 716[d]	7.5	25.6	10	30.3
Bluewater[e] (No. 8)	2	287	5	38	10	27.9
Del Bello Lakes[f] (No. 9)	2	525	15	61	10	29

(a) Information based on bid plans for lift station expansion (Plans dated January 9, 2017)

(b) Information based on plans dated January 28, 2010

(c) Initial (existing) condition - duplex pump setup

(d) Final (future) condition - triplex pump setup

(e) Information based on lift station construction plans (Plans dated February 2, 2017)

(f) Information based on lift station construction plans (Plans dated March 7, 2019)

FIGURE 2-1

CITY OF MANVEL

MASTER WASTEWATER PLAN UPDATE
EXISTING WASTEWATER SYSTEM

LEGEND

- Manhole
- Lift Station
- Private Lift Station
- Wastewater Treatment Plant
- 8" and Smaller Wastewater Line
- 10" and Larger Wastewater Line
- Force Main
- Railroad
- GCWA Regional Canal
- Lake/Pond
- Stream
- Parcel
- Existing Wastewater Service Area
- City Limit
- ETJ Boundary
- Other City Limit

Developments

- Lakeland
- Del Bello Lakes
- Bluewater Lakes

MANVEL CITY ON THE RISE

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Del Bello Lakes

Del Bello Lakes LS (9)
Firm Capacity = 525 gpm

Lakeland

Lakeland LS (7)
Firm Capacity = 550 gpm
Buildout Firm Capacity = 716 gpm

Bluewater Lakes

Bluewater Lakes LS (8)
Firm Capacity = 287 gpm

Private LS

Private LS

Private LS

Corporate Drive LS (1)
Firm Capacity = 950 gpm

Corporate Drive
Wastewater Treatment Plant
Permitted Capacity
Average Daily Flow = 0.5 MGD
Peak Flow = 2.0 MGD

McCoy Road LS (3)
Firm Capacity = 317 gpm

Lewis Lane LS (6)
Firm Capacity = 200 gpm

Large Avenue LS (4)
Firm Capacity = 300 gpm

Rogers Road LS (5)
Firm Capacity = 433 gpm

8" F.M.
6" F.M.
3" F.M.
12" F.M.
15" F.M.

South Fwy
Highway 6
Highway 288
Rodeo Palms Pkwy
Del Bello Blvd
Del Bello Spur
Martin Ridge Dr
Basin Park Dr
Palmero Way
Pinehurst Dr
Terra Bella Dr
Bissell Rd
Shaw Rd
Kreuzer St
Clark Rd
Burnett Rd
Kirchner Rd
Mendiola Pkwy
Jordan Rd
Colony Loop
County Road 78
County Road 380
County Road 418
Chance Ln
Cemetery Rd
Manvel Cemetery
Mustang Bayou
Chocolate Bayou
East Fork Chocolate Bayou
Del Bello Rd
Lira Rd
Patterson Rd
Pollard Dr
Master Rd
Mississippi Rd
Georgia St
Alabama St
Landmark
Pine St
Flora Rd
Cedar St
Crest Ave
Creek Rd
Horse Shoe Dr
Grassfield Dr
Loudoun End St
Westfield Dr
Cambridge St
Cemetery Rd
Allenia Trail
Colony Loop W
Colony Loop
Lowes Ln
Nova Ln
Chance Ln
Istom Dr

0 1,600
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2.3 COLLECTION SYSTEM

The City of Manvel's existing wastewater collection system consists of approximately 17 miles of gravity lines and approximately 5 miles of force mains. Wastewater gravity line diameters range from 4-inches to 24-inches. The majority of the collection system network is comprised of 8-inch wastewater lines. **Figure 2-2** illustrates the percentage of pipe length by diameter based on the City's geographic information system (GIS) database. Most of the known wastewater line material is Polyvinyl chloride (PVC), as illustrated on **Figure 2-3**. **Figure 2-4** shows the percentage of pipe length by installation decade where information was available. Most of the City's gravity lines were installed after 2013.

Figure 2-2: Gravity Line Length by Diameter

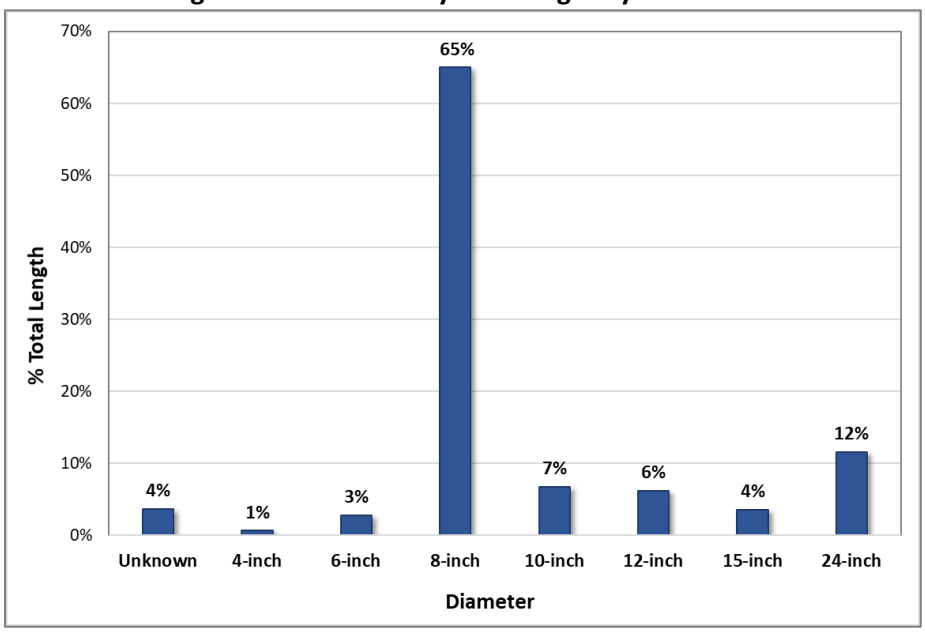


Figure 2-3: Gravity Pipe Length by Material

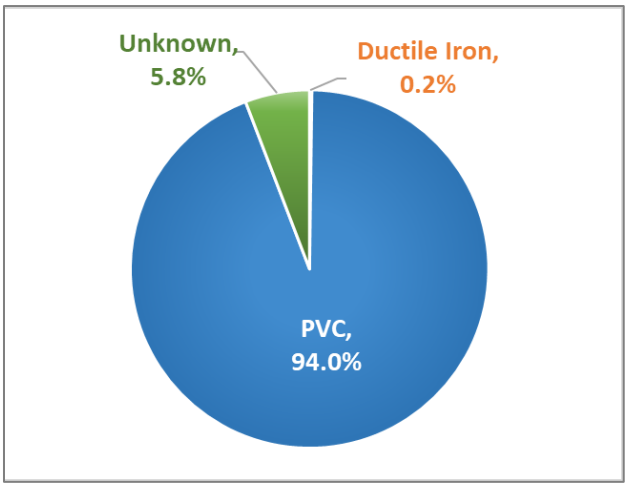
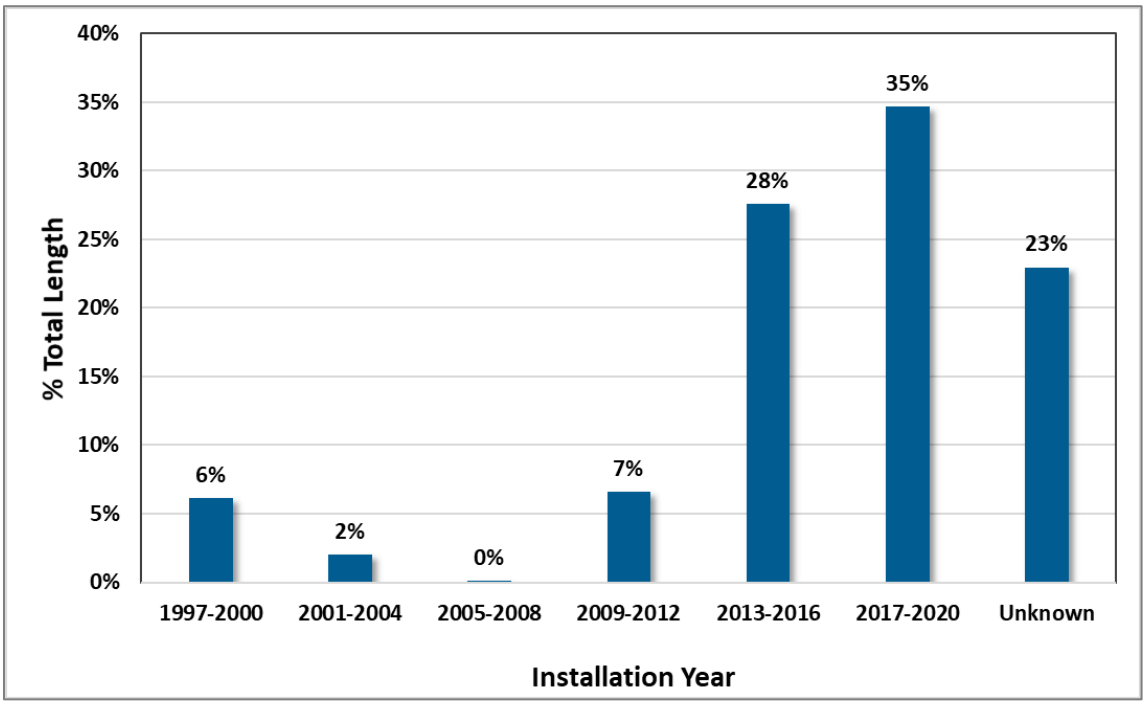


Figure 2-4: Gravity Pipe Length by Installation Year



The City recently completed construction of wastewater lines along Palmetto Street and Large Avenue. The GIS shapefiles and above figures have been updated to include the recently constructed lines per as-built plans or record drawings received from the City. These plans include:

- Large Avenue Sanitary Sewer Plan (2017)
- Terra Estates Sanitary Sewer Construction Plans (2020)

2.4 MUNICIPAL UTILITY DISTRICT (MUD) WASTEWATER TREATMENT PLANTS

In addition to the City of Manvel (Corporate Drive) wastewater treatment plant, there are four existing Municipal Utility District (MUD) WWTPs within the city limits and ETJ that serve the Southfork, Sedona Lakes, Pomona, Rodeo Palms, Foxtail Palms, Newport Lake Estates, and Yanni Palms developments. Information for these WWTPs, including the existing and future permitted average daily flow (ADF) and peak 2-Hour capacities are shown in **Table 2-3**.

Table 2-3: MUD Wastewater Treatment Plant Information

WWTP Name (Development) - TPDES Permit No.	Phase	ADF[1] Permit (MGD)	Peak 2-Hour[1] Permit (MGD)	Peaking Factor	Parcel Size (Acres)	Discharge[1] Water(s)
Southfork - WQ0014322001	**Interim II**	**0.48**	**1.90**	**4.0**	5.8	American Canal in Segment No. 1100 of the San Jacinto-Brazos Coastal Basin
	Final	0.75	2.22	3.0		
Sedona Lakes - WQ0014756001	Interim I	0.15	0.6	4.0	4.58	Mustang Bayou
	Interim II	**0.30[2]**	**1.2[2]**	**4.0**		
	Final	0.60	2.4	4.0		
Pomona - WQ0014641001	Interim I	0.125	0.5	4.0	3.7	Mustang Bayou
	Interim II	**0.25[3]**	**1.0[3]**	**4.0**		
	Interim III	0.375	1.5	4.0		
	Final	0.50	2.0	4.0		
Rodeo Palms - WQ0014253001	Interim I	0.225	0.64	4.0	0.84	Brazoria County Drainage District No. 4 ditch E102-00-00, thence to Chocolate Bayou
	Interim II	0.375	1.12	3.0		
	Final	**0.450[4]**	**1.27[4]**	**2.8**		

(1) Permitted flow and discharge information from TCEQ TPDES Permits (Appendix C)
(2) Sedona Lakes has completed the first permitted expansion to 0.30 MGD ADF, and 1.2 Peak 2-Hour Flow
(3) Pomona has completed the first permitted expansion to 0.25 MGD ADF, and 1.0 Peak 2-Hour Flow
(4) Rodeo Palms has completed the final permitted expansion to 0.450 MGD ADF, and 1.27 Peak 2-Hour Flow. This WWTP serves Rodeo Palms, Foxtail Palms, Newport Lake Estates, and Yanni Palms developments.

3.0 LAND USE AND GROWTH PROJECTIONS

Land use and growth projections are important elements in the analysis of wastewater collection systems. Wastewater loads are dependent on the residential population and commercial development served by the system and affect the sizing and location of system infrastructure. FNI worked with City staff to develop growth projections for Manvel and also utilized information collected from the existing and upcoming developments within the city limits and ETJ. These growth projection assumptions were utilized throughout the *2022 Master Wastewater Plan Update*.

3.1 WASTEWATER SERVICE AREA

The City's existing wastewater collection system extends along Highway 6 from State Hwy 288 to the east and includes service to customers in **Lakeland**, **Bluewater Lakes**, and **Del Bello Lakes** development as well as additional connections within the city limits. The current wastewater service area covers approximately 2.3 square miles and is shown in **purple** on **Figure 3-1**.

There are three MUD WWTPs and associated collection system infrastructure within the **Rodeo Palms**, **Pomona**, and **Southfork** developments that serve customers west of SH 288 within Manvel city limits and ETJ and a fourth MUD WWTP to the north at **Sedona Lakes** development. There MUD WWTPs are independent from the City's collection system. This master plan incorporates a 20-year planning period, during which the City plans to assume ownership and operation of the independent wastewater systems to the west of SH 288 discussed above as well as extend wastewater service to additional customers within the city limits. The 20-year wastewater service area for this master plan covers approximately 30 square miles and is shown in **green** on **Figure 3-1**.

Future Developments

FNI worked with City staff to identify future developments as shown on **Figure 3-2.** This includes the existing and anticipated development in the Manvel ETJ including Rodeo Palms, Pomona, Southfork, Town Center, Foxtail Palms, Newport Lake Estates, Yanni Palms, MUD 47 and Avellino Palms, Presidio, Valencia, Terra Estates, Manvel City Center, Sedona Lakes, and Meridiana. Additional information on these developments is provided in the following sub-sections of this report.

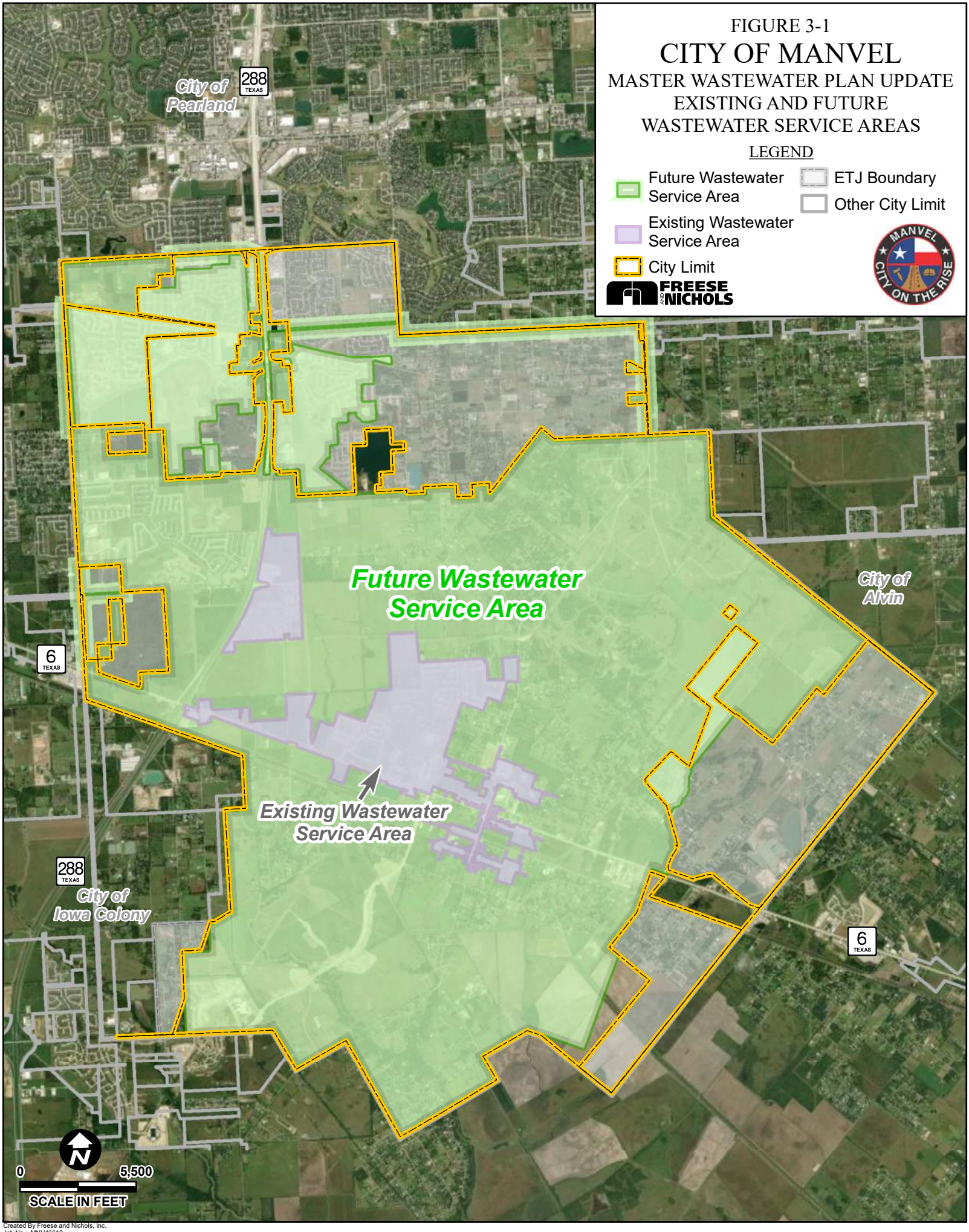
Infill Areas

Infill projections were developed for parcels not already identified as an anticipated development. This allows the City to plan for wastewater service to these additional areas with the potential to develop within the city limits. Based on the general location, these are referred to as City Central, City East, City West, and City South infill areas in this master plan.

FIGURE 3-1

CITY OF MANVEL

MASTER WASTEWATER PLAN UPDATE
EXISTING AND FUTURE WASTEWATER SERVICE AREAS



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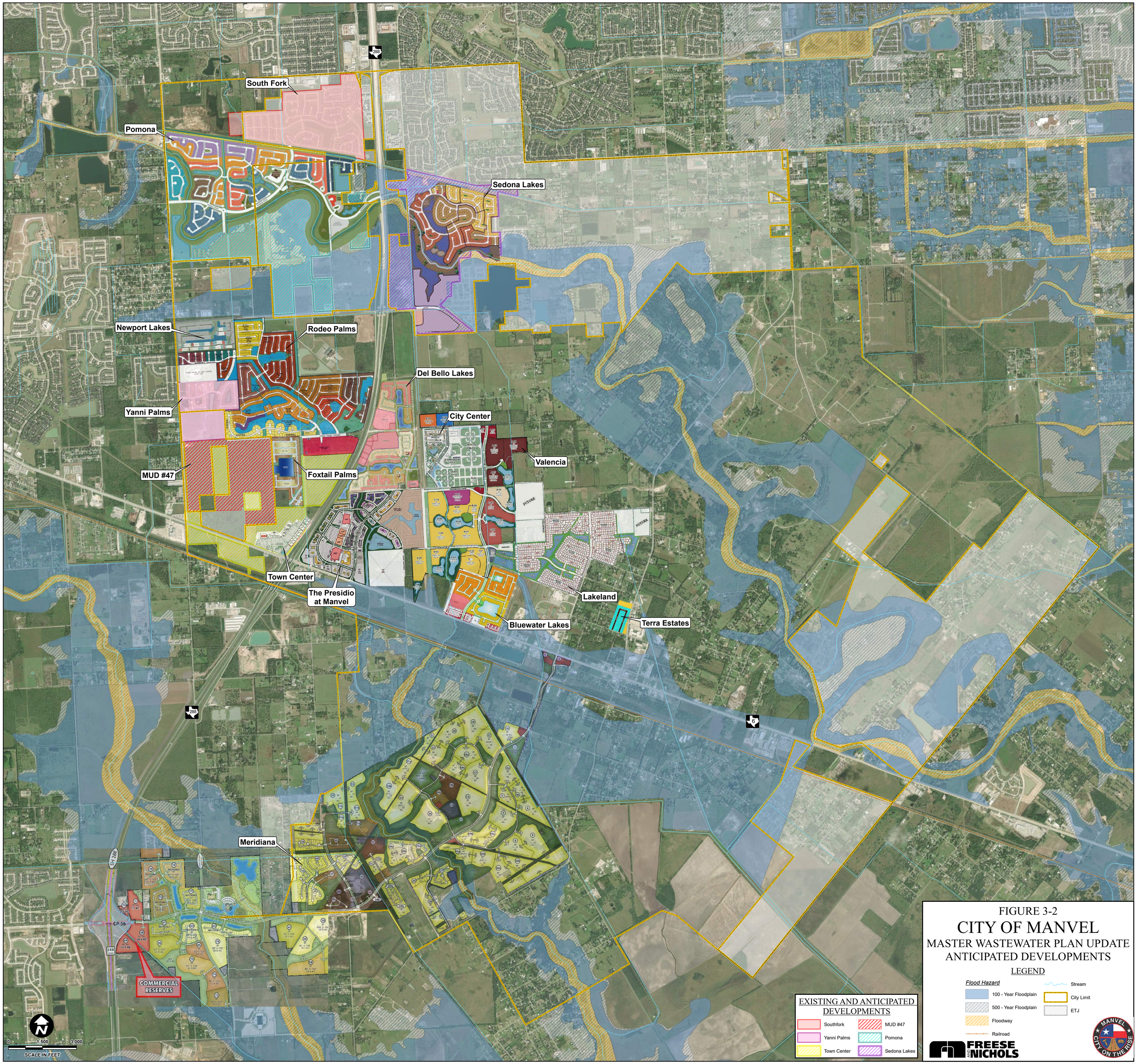

EXISTING AND ANTICIPATED DEVELOPMENTS

- Southfork
- MUD #47
- Yanni Palms
- Pomona
- Town Center
- Sedona Lakes

FIGURE 3-2

CITY OF MANVEL

MASTER WASTEWATER PLAN UPDATE
ANTICIPATED DEVELOPMENTS

LEGEND

Flood Hazard

- 100 - Year Floodplain
- 500 - Year Floodplain
- Floodway
- Railroad
- Stream
- City Limit
- ETJ

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MANVEL CITY ON THE RISE

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3.2 GROWTH PROJECTIONS

The growth in residential and commercial wastewater connections will inform the location, sizing, and timing of future wastewater infrastructure. Projecting residential and commercial growth is challenging, especially for small geographic areas such as individual cities because it can be difficult to predict how fast or slow development will occur when there are a variety of circumstances that can impact it. A thorough analysis of projected growth in the wastewater service area provides the basis for future wastewater loads and infrastructure recommendations.

3.2.1 Existing Wastewater Connections

The City utilizes equivalent single family connections (ESFCs) to project wastewater loads and to determine the sizing and location of wastewater system infrastructure. These represent residential and commercial wastewater customers. Each ESFC represents a wastewater load (gallons/day) that must be conveyed and treated by the wastewater system. The City of Manvel Utility Billing Department provided information on existing number of water meters and their corresponding sizes. Utilizing this data and additional information received from the City, it was calculated that as of July 2021, Manvel served 1,635 ESFCs in their wastewater system.

3.2.2 Projected Wastewater Connections

FNI developed projected wastewater ESFCs for the **5-year**, **10-year**, and **20-year** planning periods for this *2022 Master Wastewater Plan Update*. During this study, FNI received future projection information from the City, developers, and available development documents for the anticipated developments shown on **Figure 3-2**. The developers of each anticipated development supplied projected buildout connections and an approximate growth per year. For developments where a phasing plan was unavailable, FNI worked with the City staff to develop growth assumptions. In addition to the known developments, growth projections were also developed for select areas within the wastewater service area identified as having potential for growth (infill areas) within the 20-year planning period. A summary of data sources utilized during wastewater ESFCs projections are provided below:

- Information from development engineers for known developments (where available)
- Input from City Staff
- Developed lot counts from recent aerial photography

- Assumptions for timing of development, connections/acre, and city infill based on developer information and related project experience

The total projected ESFCs by planning year are presented in **Table 3-1** and on **Figure 3-3**. Planning year ESFCs for individual developments as well as infill areas are shown on **Figure 3-4**. Detailed information on projected wastewater connections for each development are included in **Table 3-2**.

Table 3-1: Projected Wastewater ESFCs

Year	Projected Wastewater ESFCs		
	City Limits	ETJ	Total
2021	3,628[(1)]	3,155	6,783
2026	8,904	5,876	14,780
2031	13,311	6,530	19,841
2041	25,412	6,541	31,953

(1) Includes existing wastewater connections in developments within city limits that are not currently served by the City.

Figure 3-3: Projected Wastewater ESFCs

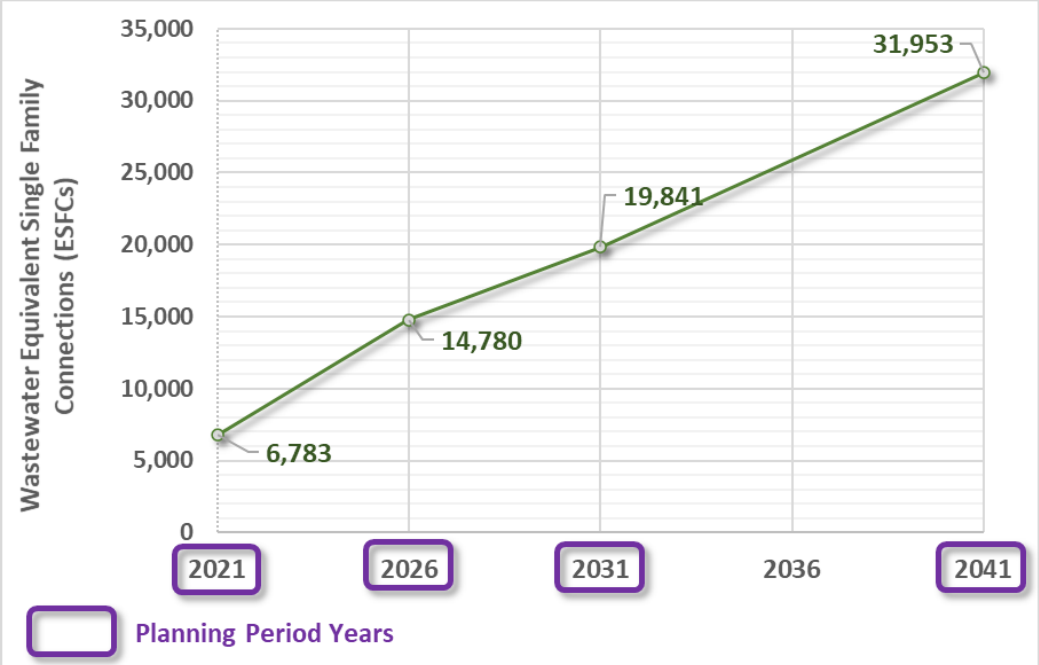

FIGURE 3-4

CITY OF MANVEL

MASTER WASTEWATER PLAN UPDATE
ANTICIPATED DEVELOPMENTS AND PROJECTED ESFCs

Wastewater Connections
Development Name
2021 Existing Connections
2026 Projected Wastewater Connections
2031 Projected Wastewater Connections
2041 Projected Wastewater Connections

LEGEND

- Manhole
- Manvel Lift Station
- Private Lift Station
- Wastewater Treatment Plant
- 8" and Smaller Wastewater Line
- 10" and Larger Wastewater Line
- Force Main
- Railroad
- GCWA Region Canal
- Existing Wastewater Serice Area
- MUD
- Manvel City Limit
- Manvel ETJ

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EXISTING AND ANTICIPATED DEVELOPMENTS

- Bluewater Lakes
- City Center
- Del Bello Lakes
- Foxtail Palms
- Lakeland
- MUD #47 and Avellino Palms
- Meridiana
- Newport Lake Estate
- Pomona
- Presidio
- Rodeo Palms
- Sedona Lakes
- Southfork
- Terra Estates
- Town Center
- Valencia
- Yanni Palms

Southfork
1350
1400
1400
1400

Southfork WWTP
Permitted Capacity
Average Daily Flow = 0.48 MGD
Peak Flow = 1.9 MGD

Pomona
1077
3023
3267
3278

Pomona WWTP
Permitted Capacity
Average Daily Flow = 0.25 MGD
Peak Flow = 1.0 MGD

Sedona Lakes
728
1313
1313
1313

Sedona Lakes WWTP
Permitted Capacity
Average Daily Flow = 0.3 MGD
Peak Flow = 1.2 MGD

Newport Lake Estate
187
200
200
200

City West
0
0
0
1000

Rodeo Palms
1750
2525
3000
3100

Rodeo Palms WWTP
Permitted Capacity
Average Daily Flow = 0.45 MGD
Peak Flow = 1.27 MGD

Yanni Palms
33
199
364
364

Del Bello Lakes
306
446
446
446

Del Bello Lakes LS (9)
Firm Capacity = 0.76 MGD

MUD #47
0
140
550
550

Foxtail Palms
23
136
250
250

City Central
331
581
831
2331

City Center
0
484
1090
1090

City East
0
0
0
3000

Town Center
0
500
1100
1950

Presidio
0
90
537
2146

Valencia
0
1000
1250
1250

Lakeland
669
669
669
669

Lakeland LS (7)
Firm Capacity = 0.78 MGD
Buildout Firm Capacity = 1.03 MGD

Private LS

Bluewater Lakes LS (8)
Firm Capacity = 0.41 MGD

Bluewater Lakes
329
508
508
508

Terra Estates
0
66
66
66

Corporate Drive WWTP
Permitted Capacity
Average Daily Flow = 0.5 MGD
Peak Flow = 2.0 MGD

Corporate Drive LS (1)
Firm Capacity = 1.37 MGD

McCoy Road LS (3)
Firm Capacity = 0.46 MGD

Lewis Lane LS (6)
Firm Capacity = 0.29 MGD

Large Avenue LS (4)
Firm Capacity = 0.44 MGD

Rogers Road LS (5)
Firm Capacity = 1.20 MGD

Meridiana
0
1500
3000
4042

MUD No. 56 WWTP

City South
0
0
0
3000

City of Pearland
City of Pearland Silverlake WWTP
City of Iowa Colony
Rawlings Lakes
City of Alvin
Alvin Golf & Country Club

0 1,500 3,000
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City of Manvel
Master Wastewater Plan Update
Table 3-2: Projected Wastewater ESFCs per Development

Development/Area		BC MUD #	ESFCs		Buildout Year	Notes on Projected ESFCs and Growth Rate
			2021	2041[(1)]		
West Basin	Rodeo Palms	MUD #29	1,750	3,100	2033	Received from Developer
	Pomona	MUD #39 and #40	1,077	3,278	2032	Received from Developer
	Southfork	MUD #25	1,350	1,400	2024	Received from Developer
	Town Center	MUD #42	0	1,950	2039	Received from Developer
	Foxtail Palms	MUD #29	23	250	2031	Buildout information from Developer
	Newport Lake Estates		187	200	2022	Existing and buildout information, and buildout year from City
	Yanni Palms		33	364	2031	Buildout information from Developer
	MUD 47 and Avellino Palms	MUD #47	0	550	2031	Buildout information from Developer; assuming Avellino Palms Buildout by 2026
	City West	-	0	1,000	Beyond 2041	Assumed 100 ESFCs added to the City's collection system per year beyond 10-years (starting 2032).
Central Basin	Del Bello Lakes	MUD #43	306	446	2022	Existing and buildout information, and buildout year from City
	Presidio	MUD #30	0	2,146	2041	Buildout projections from developer; to be completed in 5-15 years; master plan projections assuming starts in 2026; 25% Buildout by 2031, 50% Buildout by 2036, 100% Buildout by 2041.
	Valencia	-	0	1,250	2027	Buildout ESFCs of from Developer; Projected to start construction in 2022 per City; projected buildout year from developer.
	Manvel City Center	-	0	1,090	2031	Calculated wastewater ESFCs based on approved Mancel City Center Scheme B; projected to start in 2023 and buildout by 2031 per City
	Bluewater Lakes	MUD #66	329	508	2022	Existing and buildout information, and buildout year from City
	Lakeland	MUD #61	669	669	2021	Buildout information from City
	Terra Estates		0	66	2023	Buildout information from City
	City Central	-	331	2,331	Beyond 2041	Applied 2.0 connections/acre for all land (including currently developed) in the Central Basin not in a currently identified development, in the 100-year floodplain, on the selected WWTP parcels, or in the ETJ. Assumed 50 connections/year through 2031. Assumed 150 connections/year everywhere through 2041.
East Basin	City East	-	0	3,000	Beyond 2041	Applied 2.0 connections/acre for all land (including currently developed) in the East Basin not in a currently identified development, in the floodplain, on the selected WWTP parcels, or in the ETJ. Assumed 300 ESFCs added per year beyond 2031.
South Basin	City South	-	0	3,000	Beyond 2041	Applied 2.0 connections/acre for all land (including currently developed) in the South Basin not in a currently identified development, in the floodplain, on the selected WWTP parcels, or in the ETJ. Assumed 300 ESFCs added per year beyond 2031.
	Sedona Lakes	MUD #1	728	1,313	2025	Received from Developer
Meridiana		MUD # 56 and #57	0	4,042	2035	Received from City

(1) All projections end at the 20-Year planning period (2041)

4.0 WASTEWATER FLOWS

Planning for future wastewater infrastructure is dependent on the amount of average daily and peak wastewater flow that must be collected, conveyed, and treated. Wastewater treatment plants are sized based on average daily flows, while the collection system infrastructure, including lift stations, is sized to convey peak wastewater flows.

In this master plan update, FNI documented the existing City of Manvel (Corporate Drive) WWTP historical wastewater flows and the City's wastewater flow design criteria. FNI also developed wastewater service areas for regional wastewater conveyance and treatment infrastructure, and projected average day and peak wastewater flows for the existing, **5-year**, **10-year**, and **20-year** planning periods in this study. These flows were utilized in the hydraulic modeling and system planning to develop future wastewater collection and treatment system improvements.

4.1 HISTORICAL WASTEWATER FLOWS

The City provided FNI with monthly average wastewater effluent data from July 2009 to June 2020. More recent annual average flows for the City of Manvel (Corporate Drive) WWTP were obtained from Texas Commission on Environmental Quality (TCEQ) Texas Pollutant Discharge Monitoring Reports (DMRs). The City of Manvel WWTP was permitted for 0.25 MGD of annual average daily flow (AADF) until January 2019 when the permitted AADF was increased to 0.5 MGD and the plant was expanded. The historical WWTP flows are shown in **Table 4-1.**

Table 4-1: Historical City of Manvel WWTP Flows

Year	Annual Average Daily Flow(1) (MGD)
2016	0.18
2017	0.16
2018	0.12
2019	0.16
2020	0.19
2021	0.26
Average	**0.18**
Maximum	**0.26**

(1) Data from TCEQ website

4.2 REGIONAL WASTEWATER TREATMENT PLANT SERVICE AREAS

The City's existing wastewater system consists of a single wastewater service area that collects wastewater flows and conveys them to the City of Manvel (Corporate Drive) WWTP. For the City's future wastewater system, FNI delineated six distinct wastewater service areas that will each convey wastewater flows to regional wastewater treatment facilities.

1. Central Wastewater Service Area

The City currently owns and operates the wastewater treatment plant located at 7315 Corporate Drive. This WWTP was expanded to an average day capacity to 0.5 MGD in 2019. The City also owns approximately 6.5 acres of land near the existing WWTP site that has been selected for a regional wastewater treatment facility that will expand the total treatment capacity for the Central region.

The City's existing wastewater treatment plant serves residential and commercial City connections, as well as the **Lakeland**, **Bluewater Lakes**, and **Del Bello Lakes** developments, as of July 2021. The Central Wastewater Service Area is also planned to include all projected wastewater flows from the **Presidio**, **Valencia**, **Terra Estates**, and **Manvel City Center** developments. The capital improvements plan (discussed in **Section 8.0**) identifies infrastructure to treat and convey wastewater flows from the Central Service Area to a regional WWTP in the Central Wastewater Service Area for treatment. The proposed **Central** Wastewater Service Area is shown on **Figure 4-1**.

2. East Wastewater Service Area

The City does not currently have wastewater infrastructure in the eastern portions of the Manvel city limits but anticipates extending wastewater service to customers in these areas in the future. Existing residential and commercial properties in these areas are primarily rural, and there are large portions of vacant, developable land. The East service area will be part of the Mustang Bayou watershed north of the Bissel Road, and the topography in this area slopes generally from the northwest to the southeast. This study recommends a new East Service Area Regional Lift Station to pump wastewater flows generated in these areas to the **Central** WWTP. This lift station is proposed to be located near Mustang Bayou and Hwy 6. The proposed **East** Wastewater Service Area is shown on **Figure 4-1**.

3. West Wastewater Service Area

There are eight (8) existing and anticipated developments west of State Highway (SH) 288 that are inside the City's ETJ and/or city limits. There are three MUD WWTPs in this area. The MUD WWTPs at **Southfork** and **Pomona** serve the respective developments. The MUD WWTP at **Rodeo Palms** serve Rodeo Palms **Foxtail Palms**, **Newport Lake Estates**, **Yanni Palms**, and plan to serve **MUD 47 and Avellino Palms** developments. The service is to be established by a development agreement. The upcoming **Town Center** development is currently undergoing construction of a WWTP for the development. The City's *2017 Master Wastewater Plan* proposed a regional WWTP to the west of SH 288 due to the difficulty and cost associated with transferring wastewater flows across the highway. This regional WWTP is planned to serve the **West** Wastewater Service Area (shown on **Figure 4-1)** and allow for the consolidation of all of the MUD plants West of SH 288.

The first phase of the West Regional WWTP is scheduled to be under design as of December 2021 in the vicinity of the **Rodeo Palms** development for an annual average day flow capacity of 2.0 MGD. This study includes recommendation of a future expansion of this WWTP to eventually serve all the wastewater flows generated in this service area.

4. Sedona Lakes Wastewater Service Area

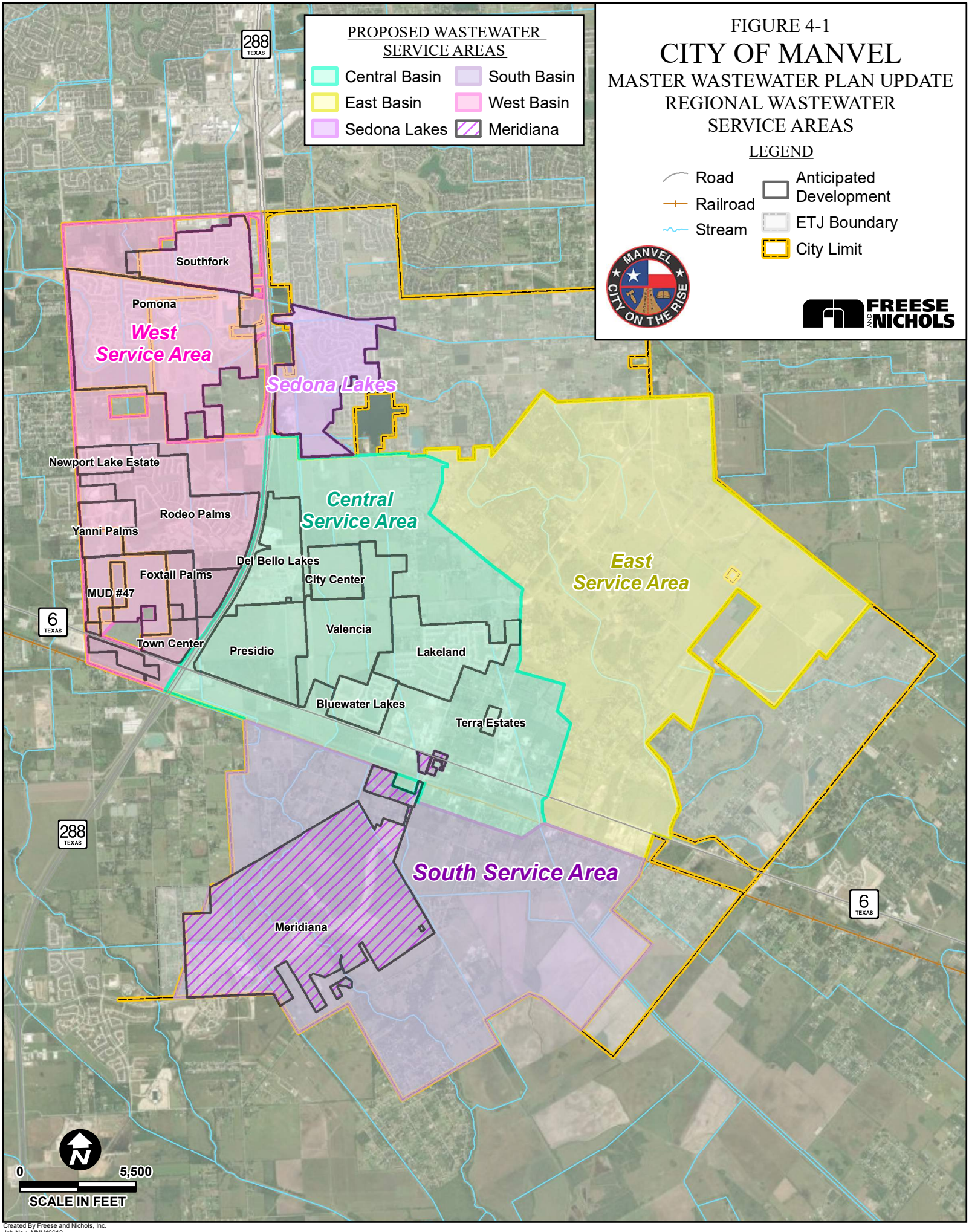
The **Sedona Lakes** development in the Manvel ETJ has an existing MUD WWTP that serves the flows generated within the development. Due to the general location of this development and potential cost of infrastructure to transfer flows to other service areas, it is recommended that Sedona Lakes continue to be served as its own service area. It is also recommended that the City takes over the operation of this WWTP and continue operating this as the Sedona Lakes Service Area WWTP. The proposed **Sedona Lakes** Wastewater Service Area is shown on **Figure 4-1**.

5. South Wastewater Service Area

The area within the city limits south of Bissel Road is identified as the **South** service area. Existing residential and commercial properties in these areas are primarily rural, and there are large portions of vacant, developable land. This study includes recommendation of a new South Area Regional Wastewater Treatment Plant to treat wastewater flows generated in this area. The proposed **South** Wastewater Service Area is shown on **Figure 4-1**.

6. Meridiana Wastewater Service Area (Manvel City Limits)

The **Meridiana** development spans portions of the City of Iowa Colony and the City of Manvel. The portion of Meridiana within the City of Manvel is located in Brazoria County MUDs 56 and 57. This development is planning to have its own collection system infrastructure and WWTP (currently under construction). There will be potential for future consolidation of the Meridiana WWTP and conveying the flows to the South Regional WWTP in future beyond the scope of this study. FNI quantified the projections from the Meridiana development within the Manvel city limits separately from the South service area and these projections are shown under **Meridiana** Wastewater Service Area on **Figure 4-1**.



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4.3 WASTEWATER FLOW PROJECTIONS

4.3.1 Wastewater Flow Design Criteria

The City of Manvel utilizes a design criteria of 315 gallons per day of wastewater flow per equivalent single family connection (ESFC). Based on the historical WWTP flows, FNI recommends applying this design criteria to all projected wastewater ESFCs in this Master Plan to calculate average day wastewater flows. For peak flows, FNI recommends using a peaking factor of 4.0, based on TCEQ guidelines in the absence of site specific data (30 TAC §217.32 (a)(2)). The planning criteria used for developing all projected average day and peak wastewater flows for this Master Plan is shown in **Table 4-2**.

Table 4-2: Wastewater Flow Design Criteria

Wastewater Connection Unit	Average Day Wastewater Flow	Peak Wastewater Flow
ESFC [1]	315 gallons per day	4.0 x 315 gallons per day

(1) Equivalent Single Family Connection

4.3.2 Projected Wastewater Flows

FNI calculated future wastewater flows based on the projected equivalent single family connections and wastewater flow design criteria. The projected average day and peak wet weather wastewater flows for the wastewater service area (**Figure 3-1**) for each planning year are shown in **Table 4-3**. The existing and projected wastewater flows are shown graphically on **Figure 4-2**.

Table 4-3: Projected Wastewater Flows

Year	Projected Wastewater ESFCs			Average Daily Flow (ADF) (MGD)			Peak Wet Weather Flow (MGD)		
	City Limits	ETJ	Total	City Limits	ETJ	Total	City Limits	ETJ	Total
2021	3,628[1]	3,155	6,783	1.14	0.99	2.1	4.57	3.98	8.5
2026	8,904	5,876	14,780	2.80	1.85	4.7	11.22	7.40	18.6
2031	13,311	6,530	19,841	4.19	2.06	6.2	16.77	8.23	25.0
2041	25,412	6,541	31,953	8.00	2.06	10.1	32.02	8.24	40.3

(1) Includes existing wastewater connections in developments within city limits not currently served by the City.

Table 4-4 summarizes the projected ESFCs, average day wastewater flows, and peak wet weather wastewater flows for each development and WWTP Service Area for each planning year.

Table 4-4: Projected Wastewater Flows by Service Area

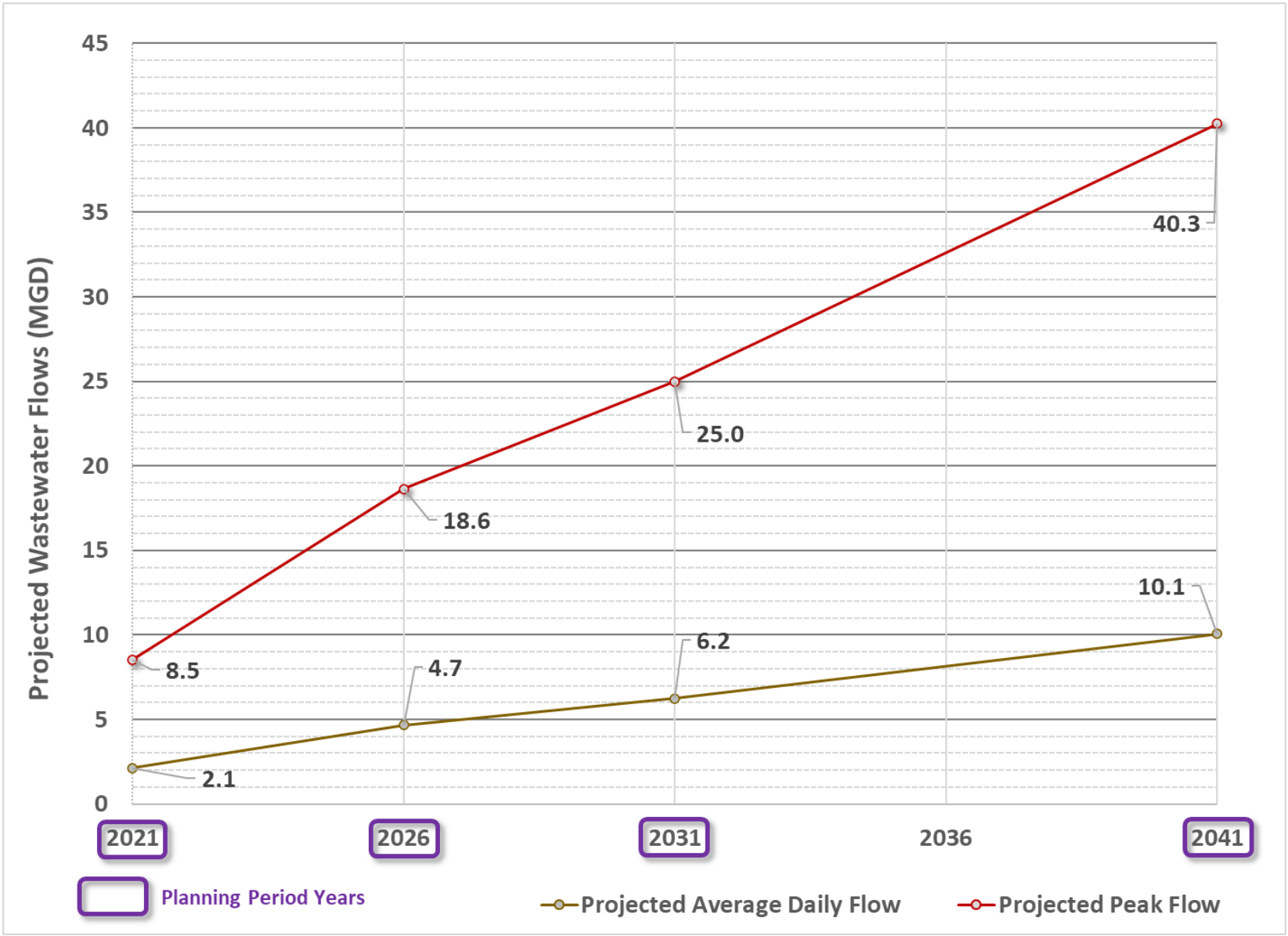
Development/Area		2021 (Existing)				2026 (5-year)				2031 (10-year)				2041 (20-year)			
		ESFCs[1]	%	ADF	Peak	ESFCs[1]	%	ADF	Peak	ESFCs[1]	%	ADF	Peak	ESFCs[1]	%	ADF	Peak
West Basin	Rodeo Palms	1,750	56%	0.55	2.2	2,525	81%	0.80	3.2	3,000	97%	0.95	3.8	3,100	100%	0.98	3.9
	Pomona	1,077	33%	0.34	1.4	3,023	92%	0.95	3.8	3,267	100%	1.03	4.1	3,278	100%	1.03	4.1
	Southfork	1,350	96%	0.43	1.7	1,400	100%	0.44	1.8	1,400	100%	0.44	1.8	1,400	100%	0.44	1.8
	Town Center	0	0%	0.00	0.0	500	26%	0.16	0.6	1,100	56%	0.35	1.4	1,950	100%	0.61	2.5
	Foxtail Palms	23	9%	0.01	0.0	136	54%	0.04	0.2	250	100%	0.08	0.3	250	100%	0.08	0.3
	Newport Lake Estates	187	86%	0.06	0.2	200	100%	0.06	0.3	200	100%	0.06	0.3	200	100%	0.06	0.3
	Yanni Palms	33	9%	0.01	0.0	199	55%	0.06	0.3	364	100%	0.11	0.5	364	100%	0.11	0.5
	MUD 47 and Avellino Palms	0	0%	0.00	0.0	140	25%	0.04	0.2	550	100%	0.17	0.7	550	100%	0.17	0.7
	City West	0	-	0.00	0.0	0	-	0.00	0.0	0	-	0.00	0.0	1,000	-	0.32	1.3
	West Basin Subtotal	***4,420***	***-***	***1.4***	***5.6***	***8,123***	***-***	***2.6***	***10.2***	***10,131***	***-***	***3.2***	***12.8***	***12,092***	***-***	***3.8***	***15.2***
Central Basin	Del Bello Lakes	306	69%	0.10	0.4	446	100%	0.14	0.6	446	100%	0.14	0.6	446	100%	0.14	0.6
	Presidio	0	0%	0.00	0.0	90	4%	0.03	0.1	537	25%	0.17	0.7	2,146	100%	0.68	2.7
	Valencia	0	0%	0.00	0.0	1,000	80%	0.32	1.3	1,250	100%	0.39	1.6	1,250	100%	0.39	1.6
	Manvel City Center	0	0%	0.00	0.0	484	44%	0.15	0.6	1,090	100%	0.34	1.4	1,090	100%	0.34	1.4
	Bluewater Lakes	329	65%	0.10	0.4	508	100%	0.16	0.6	508	100%	0.16	0.6	508	100%	0.16	0.6
	Lakeland	669	100%	0.21	0.8	669	100%	0.21	0.8	669	100%	0.21	0.8	669	100%	0.21	0.8
	Terra Estates	0	0%	0.00	0.0	66	100%	0.02	0.1	66	100%	0.02	0.1	66	100%	0.02	0.1
	City Central	331	-	0.10	0.4	581	-	0.18	0.7	831	-	0.26	1.0	2,331	-	0.73	2.9
	Central Basin Subtotal	***1,635***	***-***	***0.5***	***2.1***	***3,844***	***-***	***1.2***	***4.8***	***5,397***	***-***	***1.7***	***6.8***	***8,506***	***-***	***2.7***	***10.7***
Sedona Lakes		728	55%	0.23	0.9	1,313	100%	0.41	1.7	1,313	100%	0.41	1.7	1,313	100%	0.41	1.7
City East		0	-	0.00	0.0	0	-	0.00	0.0	0	-	0.00	0.0	3,000	-	0.95	3.8
City South		0	-	0.00	0.0	0	-	0.00	0.0	0	-	0.00	0.0	3,000	-	0.95	3.8
Meridiana		0	0%	0.00	0.0	1,500	37%	0.47	1.9	3,000	74%	0.95	3.8	4,042	100%	1.27	5.1
Total		**6,783**	**-**	**2.1**	**8.5**	**14,780**	**-**	**4.7**	**18.6**	**19,841**	**-**	**6.2**	**25.0**	**31,953**	**-**	**10.1**	**40.3**

(1) Equivalent Single Family Connection (ESFC). One ESFC = 315 Gallons of wastewater flow/day

(2) Percent Developed based on [ESFCs/2041 ESFCs]

(3) Peak Flow = 4.0 x Average Day Flow (ADF)

Figure 4-2: Projected Wastewater Flows



5.0 WASTEWATER MODEL UPDATE

The City's existing wastewater hydraulic model was developed during the *2017 Master Wastewater Plan* utilizing the InfoSewer® software by Innovyze. This software has GIS interoperability and makes use of engineering equations and mathematical algorithms to determine the flows and velocities that would occur in a collection system under a specified set of conditions.

During this 2021 update, the model was updated with recently completed wastewater infrastructure and updated flow projections. The updated model was utilized during the development of collection system capital improvement projects to improve the existing system and accommodate projected wastewater flows through 2041.

Various combinations of improvements and system modifications were investigated to assess options for conveying projected flows to regional wastewater treatment plants. Parameters used in developing the capital improvements plan included increasing system reliability, simplifying system operations, conveying peak wet weather flows and reducing the likelihood of surcharging and sanitary sewer overflows.

5.1 MODELED INFRASTRUCTURE

All wastewater gravity lines with diameters of 10-inches or larger, existing force mains and active lift station in the planning period were included in the model utilizing the latest wastewater GIS shapefile. The modeled infrastructure was updated to incorporate the following recently constructed projects based on the as-built plans:

- Large Avenue Sanitary Sewer Plan (2017)
- Terra Estates Sanitary Sewer Construction Plans (2020)
- Bluewater Lakes Lift Station No. 1 (2017)
- Del Bello Lakes Lift Station No. 1 (2019)

In this model, any missing manhole rim elevations were populated using as-built data (where available) or interpolated ground elevations from a triangular irregular network (TIN) of two-foot contours. For missing gravity line invert data, Texas Commission on Environmental Quality (TCEQ) minimum slopes were assigned to the wastewater lines, beginning at the last known invert elevation. The wet well and pumping

facilities were manually added to the model based on as-built drawings, information provided by the City, and engineering judgment.

The proposed collection system infrastructure, including manholes, gravity mains, force mains and lift stations, were added to the model as part of the system analysis. The model consists of approximately 225 links (gravity lines and force mains), 240 nodes (manholes and wet wells and including three outfalls), 14 lift stations, and 19 pumps.

6.0 WASTEWATER SYSTEM ANALYSES

FNI developed wastewater system improvements to accommodate the projected flows from residential and commercial growth. Hydraulic analyses were conducted to develop these improvements into a phased capital improvements plan to convey and treat the projected wastewater flows over the 20-year period through 2041. In order to serve the projected 20-year growth and regionalize wastewater treatment facilities, the City of Manvel should consider the following:

- Construct a new phased Central wastewater treatment plant expanding the existing Central region wastewater treatment capacity and eventually building future capacity (currently in preliminary design phase)
- Construct regional transfer infrastructure to pump wastewater flows from the East Service Area to the Central Service Area
- Construct a new wastewater treatment plant in the South service area
- Construct consolidation infrastructure and expand treatment capacity in the West Service Area
- Extend wastewater service via gravity lines, lift stations, and force mains to areas of growth where little or no infrastructure currently exists

6.1 GRAVITY LINE AND LIFT STATION DESIGN CRITERIA AND ANALYSES

The Texas Commission on Environmental Quality (TCEQ) provides specific design criteria for new wastewater gravity lines and lift stations. FNI utilized these design criteria for the recommended wastewater system improvements.

6.1.1 Design Criteria for Gravity Lines

When determining the size of proposed wastewater lines, TCEQ §217.53 (a)(1) dictates that the collection system must be designed to transport the peak wet weather flows. Per TCEQ §217.53 (l)(1), collection systems must also be designed to maintain a minimum velocity of 2 feet/second when flowing at full capacity. Maintaining these velocities discourages the settling of solids. In accordance with this, TCEQ has established minimum slope guidelines in §217.53 (l)(2)(A). These are shown in **Table 6-1**. TCEQ §217.55 (g) Table C.3 provides maximum manhole spacing based on pipeline diameter. These are provided in **Table 6-2**. The recommended gravity lines were sized based the above TCEQ criteria.

Table 6-1: TCEQ Minimum Slopes

Diameter of Pipe[(1)] (in)	Minimum Slope (ft/ft)
6	0.00500
8	0.00335
10	0.00250
12	0.00200
15	0.00150
18	0.00115
21	0.00095
24	0.00080
27	0.00070
30	0.00060
33	0.00055
36	0.00045
39	0.00040

(1) For pipes greater than 39 inches in diameter, the slope is determined by Manning's formula to maintain a velocity greater than 2.0 feet per second and less than 10.0 feet per second when flowing full.

Table 6-2: TCEQ Maximum Manhole Spacing

Diameter of Pipe (in)	Manhole Diameter (in)	Maximum Manhole Spacing (ft)
6-12	48	500
15	60	500
18-24	60	800
27-30	72	800
36-48	72	1,000
54 or larger	72	2,000

6.1.2 Design Criteria for Lift Stations and Force Mains

TCEQ design criteria §217.61 (c) states "The firm pumping capacity of a lift station must handle the peak flow." Firm pumping capacity is defined as the maximum pumping capacity with the largest pumping unit out of service. TCEQ §217.67 (a) also states that force mains shall be sized to convey the lift station

pumping capacity at a minimum velocity of 3 feet/second for duplex lift stations and 2 feet/second with one pump operating at a lift station with three or more pumps. Recommended lift station firm pumping capacities and force main sizes are based on these TCEQ criteria. Where applicable, the existing lift station wet well capacities were calculated using TCEQ minimum pump cycle times to evaluate expansion needs. These cycle times are listed in **Table 6-3**. The proposed Lift Station projects are discussed in detail in **Section 8.0**.

Table 6-3: TCEQ Minimum Pump Cycle Times

Pump Horsepower	Minimum Cycle Times (minutes)
< 50	6
50 – 100	10
> 100	15

6.1.3 System Analysis Model Results

All proposed gravity lines, lift stations, and force mains were added to the hydraulic model. The locations of existing and proposed wastewater treatment plants were modeled as system outfalls. The hydraulic model was utilized to perform system analyses on the proposed collection system under peak wet weather flow conditions. The timing and size of the recommended improvements were adjusted in order to convey the projected peak wet weather flows without surcharging.

6.2 WASTEWATER TREATMENT PLANT CAPACITY EVALUATION

Anticipating the need for future wastewater treatment capacity and planning for the physical space and location of this treatment is one of the most important steps the City can take in preparation for rapid growth. The City currently owns and operates the City of Manvel (Corporate Drive) WWTP within the Central Service Area and the City has already acquired land for the construction of the **Central** Service Area regional wastewater treatment plant as well as future expansions at this location. The City also acquired land for the future **South** WWTP identified as part of a treatment facility siting study conducted in 2021.

Recommended capacities were developed for Manvel's regional wastewater treatment plant based on the 20-year projected average day wastewater flows discussed in **Section 4.0** and the TCEQ regulatory criteria. The projected average day wastewater flows and associated treatment capacities for each of the regional service areas are shown on **Figure 6-1, Figure 6-2, Figure 6-3**, **Figure 6-4**, and **Figure 6-5**. Where applicable, the flows are broken down by developments and City connections.

6.2.1 75/90 Rule (TCEQ §305.126)

Lines showing the recommended **permitted average daily flow (ADF)**, **90% of the permitted ADF capacity**, and **75% of the permitted ADF capacity** are shown on **Figure 6-1, Figure 6-2, Figure 6-3**, and **Figure 6-4**. These lines are based on TCEQ §305.126, commonly referred to as the 75/90 rule, which requires a WWTP permit holder to begin planning for expansion of the treatment facility when the average day or average annual flow reaches 75% of the permitted capacity for three consecutive months. When the average day or average annual flow reaches 90% of the permitted capacity, the permit holder shall obtain necessary authorization from the commission to commence construction of the necessary additional treatment facilities.

Figure 6-1: Central Service Area WWTP Capacity Analysis (including East Flows)

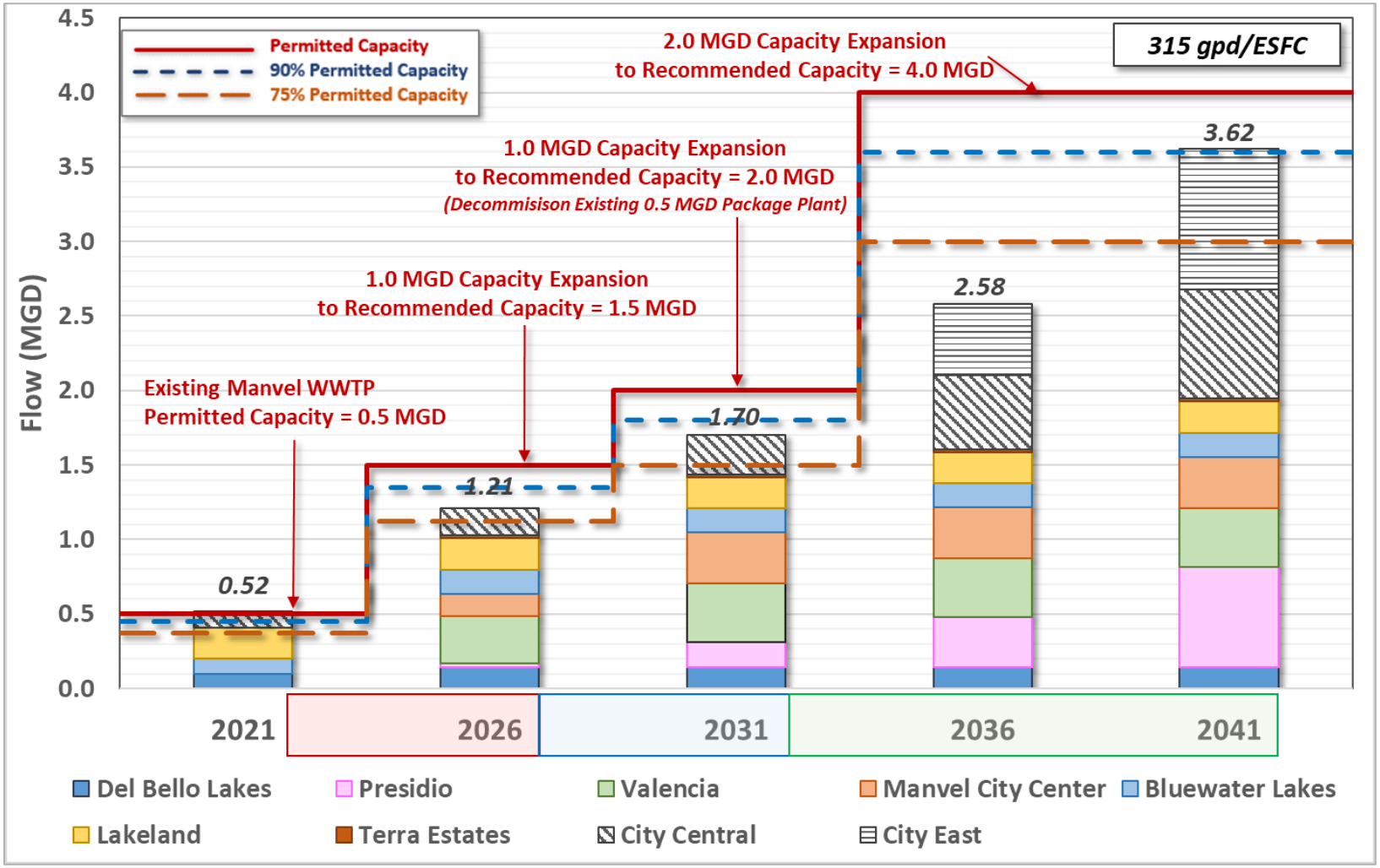


Figure 6-2: West Service Area WWTP Capacity Analysis

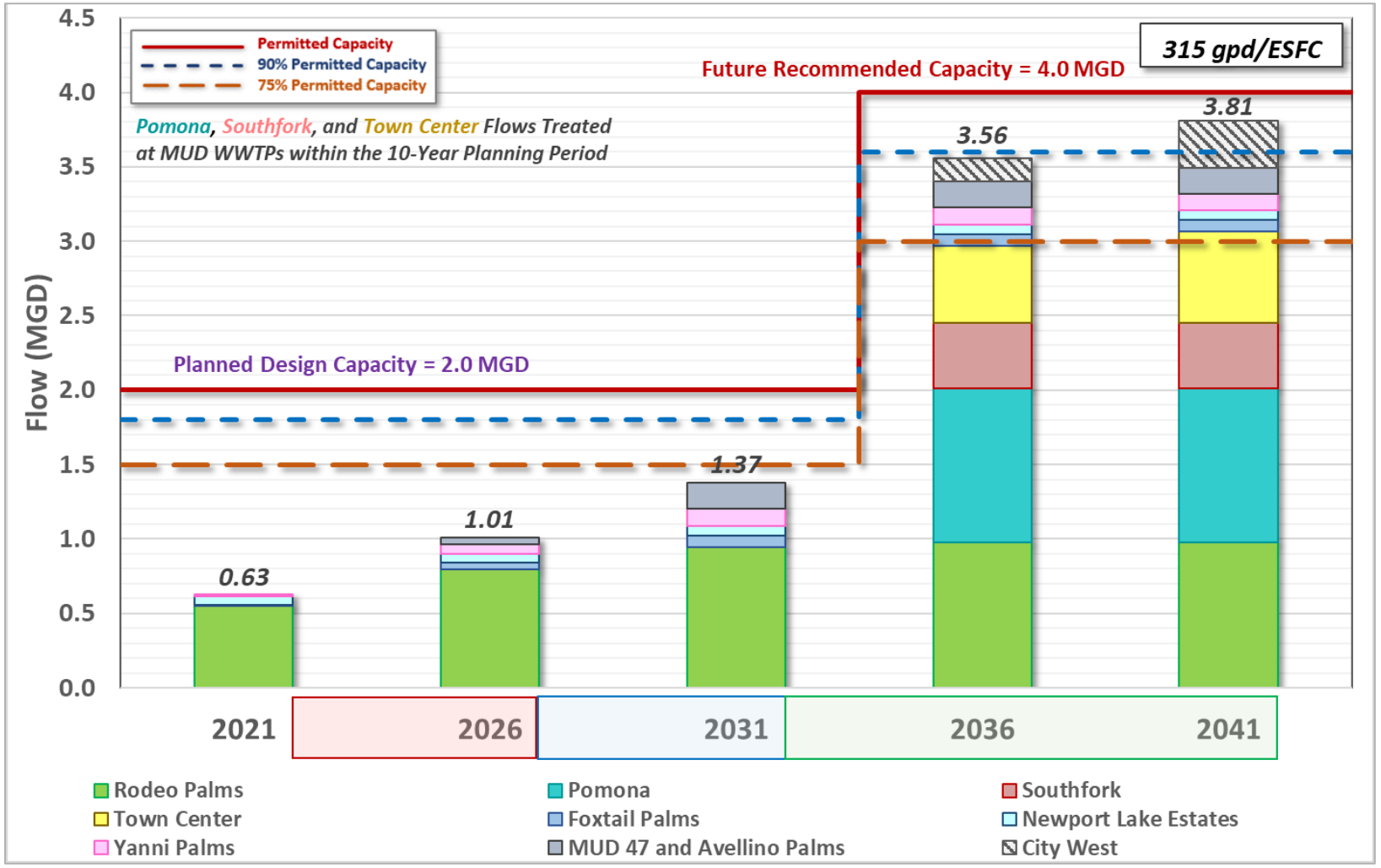


Figure 6-3: Sedona Lakes Service Area WWTP Capacity Analysis

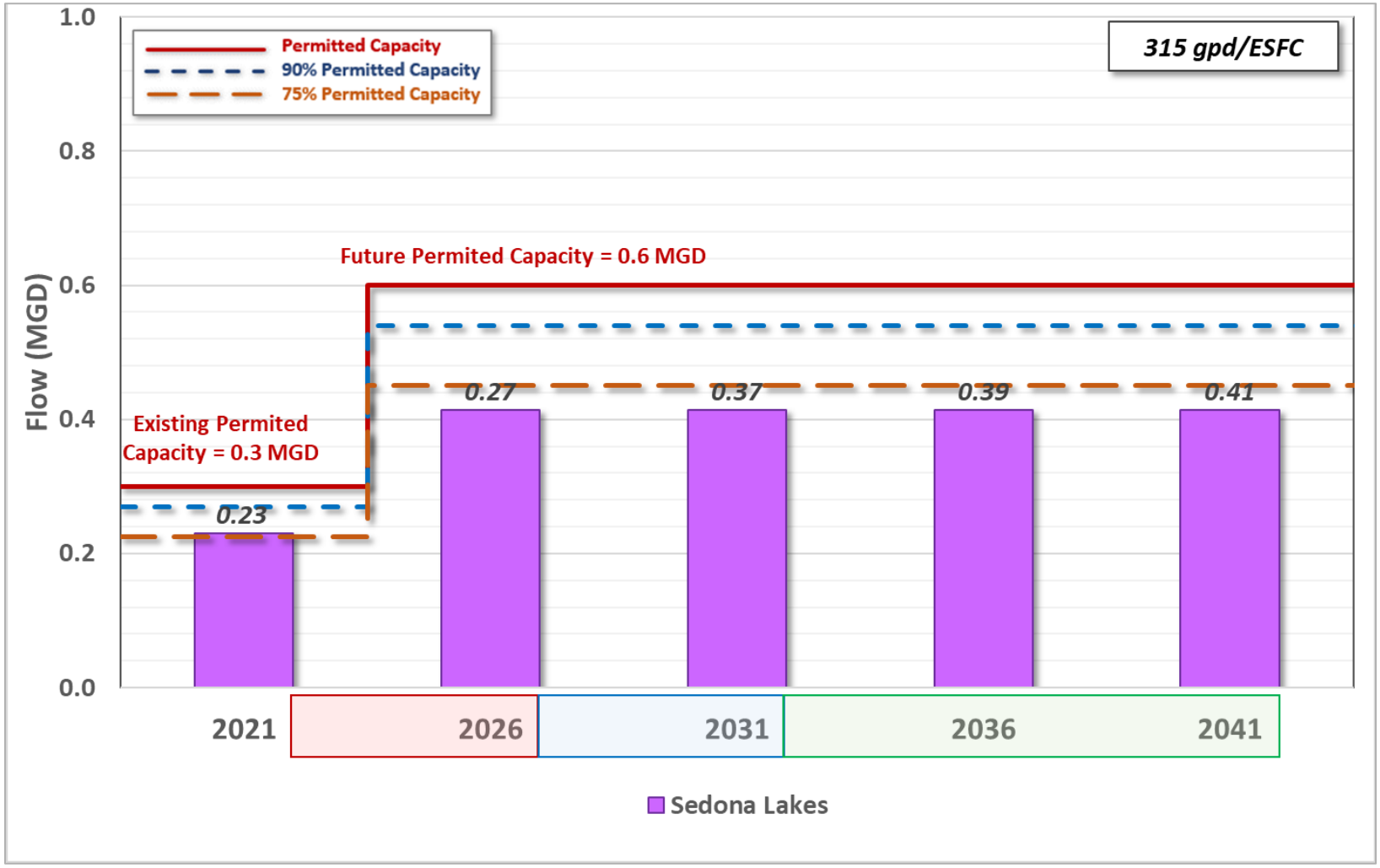


Figure 6-4: South Service Area WWTP Capacity Analysis

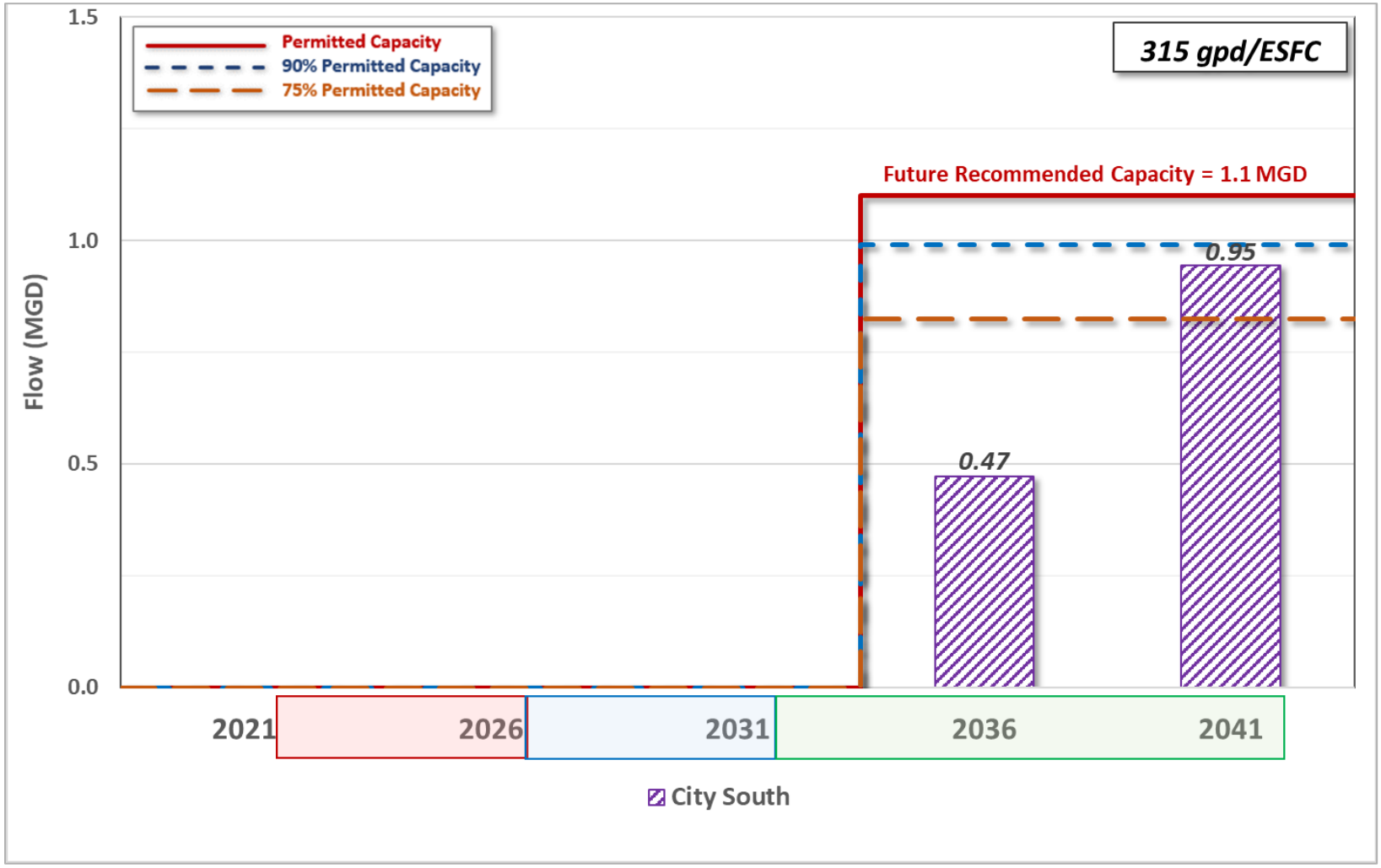
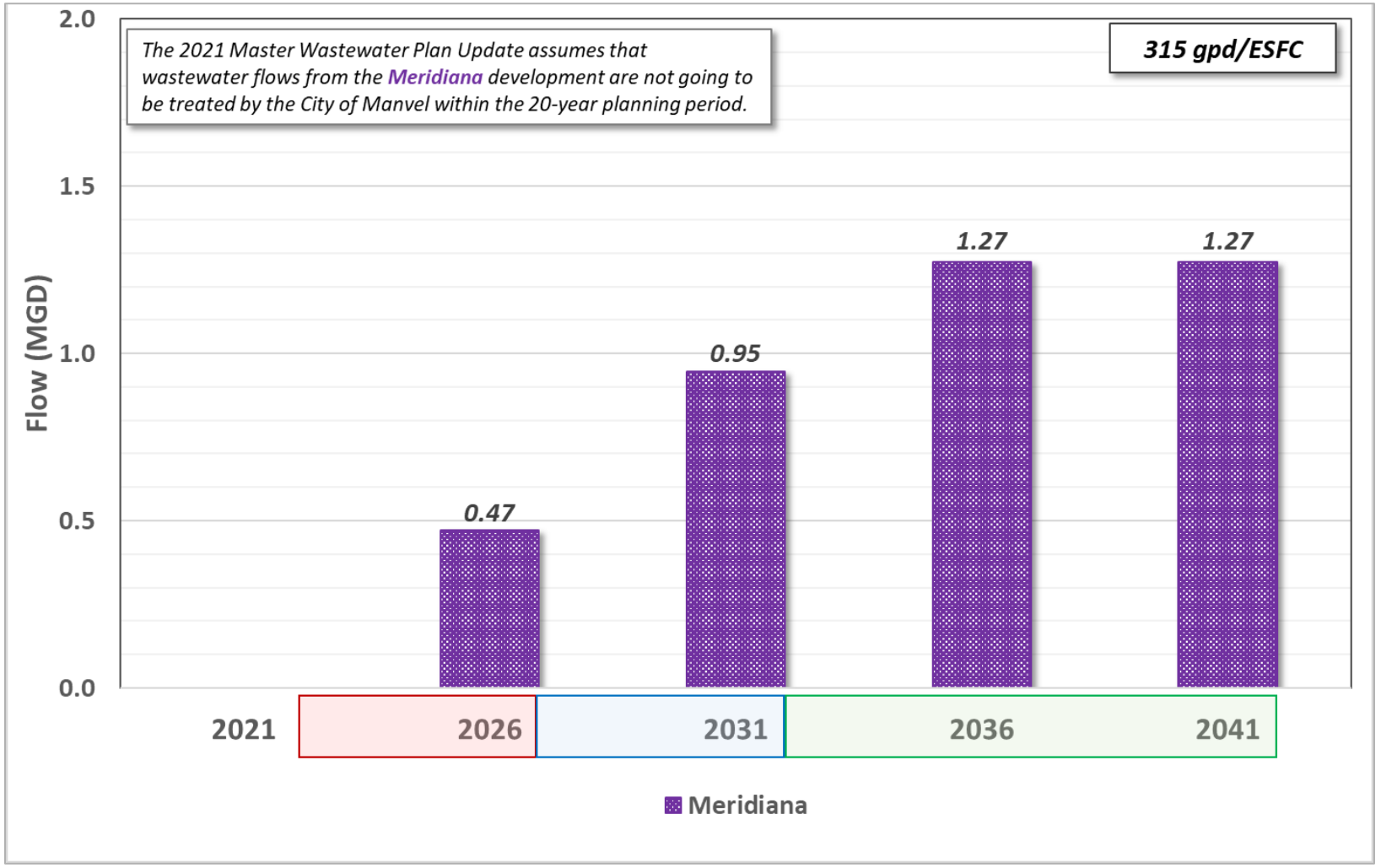


Figure 6-5: Meridiana Service Area – Projected Wastewater Flows (Manvel City Limits)



6.2.2 Future Wastewater Treatment Capacity

The following sections discuss the capacity evaluations for each wastewater service area. Recommended treatment capacities for the wastewater treatment plants were developed based on the projected average day wastewater flows and the capacity requirements in TCEQ §305.126. It should be noted that the recommended treatment plant capacities are based on best available data, incorporating the projected equivalent single family connections (ESFCs) discussed previously, and the City's design criteria of 315 gallons of wastewater flow per ESFC. If development flow rates differ from those assumed in this study or developers adjust their ultimate ESFC projections, the recommended facility capacities and/or timing of expansions should be re-evaluated.

Summary of Wastewater Treatment Capacity by Service Area and Planning Period

Table 6-4 presents a summary of the existing and proposed City of Manvel wastewater treatment facilities including the MUD WWTPs and permitted capacities by planning period. The Meridiana and Sedona Lakes service areas currently have existing MUD WWTPs, which are anticipated to eventually be part of the City's wastewater system.

Table 6-4: WWTP Capacities by Planning Period

Planning Period	Average Daily Flow Permitted Capacity (MGD)								
	Central Regional WWTP[1]	West Regional WWTP[1]	South Regional WWTP[1]	Town Center WWTP[1]	Sedona Lakes WWTP[2][4]	Meridiana WWTP[2][4]	Rodeo Palms WWTP[2][5]	Pomona WWTP[2][6]	Southfork WWTP[2][6]
2021	0.5	-	-	-	0.3	0.399	0.45	0.25	0.48
2026	1.5	-	-	0.15[7]	0.6	by MUD	by MUD	by MUD	by MUD
2031	2.0[3]	-	-	by MUD	0.6	by MUD	by MUD	by MUD	by MUD
2041	4.0	4.0	1.1	*Decommissioned and Flow Transferred to West WWTP*	0.6	by MUD	*Ownership Transfer to City as West Regional WWTP*	*Decommissioned and Flow Transferred to West WWTP*	*Decommissioned and Flow Transferred to West WWTP*

(1) City-owned WWTPs

(2) MUD WWTPs not currently owned and operated by the City.

(3) Decommission the existing 0.5 MGD package plant.

(4) Sedona Lakes WWTP and Meridiana WWTP are planned to be owned by the City in future (beyond 2041)

(5) Rodeo Palms Brazoria County MUD #29 WWTP ownership and operation to be transferred to the City as the West Regional WWTP.

(6) Pomona WWTP and Southfork WWTP are recommended to be decommissioned and served by the West Regional WWTP by 2041.

(7) Town Center WWTP is under construction as of December 2021.

1. Central Service Area

All existing wastewater flows in the Central Service Area are currently conveyed to the City of Manvel (Corporate Drive) WWTP site. This WWTP has 0.5 MGD of average daily flow permitted capacity. The wastewater flow projections show that the current 0.5 MGD capacity at this WWTP will not be sufficient to treat the projected flows from upcoming developments in near future, as shown on **Figure 6-1**.

The City has started design of a regional Central WWTP. This Central WWTP will be located on an approximately 6.5 acre tract of land adjacent to the existing City of Manvel (Corporate Drive) facility. It is planned for the City to operate both plants through the ten year planning period (2031) then decommission the existing 0.5 MGD package plant. The Central Regional WWTP will also eventually serve flows from the East service area via a planned regional lift station. Based on the flow projections in this master plan, phased expansions will be required at the Central WWTP. The recommendations based on the treatment capacity analysis in the Central service area are as follows:

- **5-Year Planning Period**: 1.0 MGD new Central Region WWTP to increase Central Region total average daily flow treatment capacity to 1.5 MGD.
- **10-Year Planning Period**: Additional 1.0 MGD expansion of the Central WWTP and decommissioning of the existing package plants, resulting in total ADF capacity of 2.0 MGD.
- **20-Year Planning Period**: Additional 2.0 MGD expansion of the Central WWTP to a total ADF capacity of 4.0 MGD.

The above mentioned expansions along with the projected wastewater flows from the proposed service area are shown on **Figure 6-1**. The City owns approximately 6.5-acre tract of land adjacent to the existing Corporate Drive WWTP site. The City has already begun preliminary design process for the first phase of the expansion. This site allows further expansion of the Central WWTP capacity beyond the 20-year planning period.

2. East Service Area

The City does not currently have wastewater infrastructure in the eastern portions of the Manvel city limits. To treat the projected future flows from this area it is recommended that the City construct a Regional Lift Station in the **20-Year planning period**. This lift station is proposed to be located in the vicinity of Hwy 6 and Mustang Bayou and will pump wastewater flows to the Central Regional WWTP. The

projected wastewater flows in the East service area (City East) are shown with the Central Regional WWTP projections on **Figure 6-1**.

3. West Service Area

There are currently three developments west of SH 288 that utilize MUD WWTPs to treat wastewater flows. Additionally, the **Town Center** development is planned at the intersection of SH 288 and Highway 6 that will have a separate WWTP (under construction). Brazoria County MUD #29 is planning construction of a new plant within the Rodeo Palms development that is scheduled to be under design in 2022. The ownership of this plant will be transferred to the City by 2041. Based on the analysis in this master plan, it is recommended to plan for a future expansion of the West WWTP to a total permitted average daily flow capacity of 4.0 MGD. This expansion is anticipated to be needed in the **20-year planning period** and will allow the WWTP to serve flows from additional City customer connections in the West service area as well as the **Town Center**, **Southfork** and **Pomona** developments. The decommissioning of these MUD WWTPs is planned to be accomplished via a network of lift stations, force mains, and gravity lines. These are discussed further in **Section 8.0**. The projected wastewater flows in the West service area along with the recommended expansion of the West WWTP are shown on **Figure 6-2**.

4. Sedona Lakes Service Area

Sedona Lakes is currently served by a MUD WWTP with an existing capacity of 0.3 MGD and permitted expansion to 0.6 MGD. Due to the location of this area, it is recommended that the City plan to serve this area in the future as a separate service area. Based on the wastewater flow projections in Sedona Lakes, the WWTP will require a 0.3 MGD expansion in the next 5 years. As this is a MUD WWTP, this expansion is not included in this master plan as a City project. It is shown as a developer project in **purple** on **Figure 8-1.**

5. South Service Area

The City does not currently have wastewater infrastructure in the southern portions of the Manvel city limits. It is recommended that the City construct a 1.1 MGD South Regional WWTP in the **20-Year planning period** to serve the wastewater flows in the area. The City has purchased land for this facility.

6. Meridiana Service Area (City Limits - Brazoria County MUDs 56 & 57)

The **Meridiana** development is located both in the City of Iowa Colony and the City of Manvel. A MUD WWTP is currently under construction to serve the **Meridiana** development. The portion of the future **Meridiana** development within the Manvel city limits is anticipated to be in Brazoria County MUDs 56 and 57. The projected buildout average day wastewater flows for the potion of the **Meridiana** Development within the city limits is 1.27 MGD. This *2022 Master Wastewater Plan Update* assumes that wastewater flows from the **Meridiana** development are not going to be treated by the City of Manvel within the 20-year planning period.

7.0 WASTEWATER TREATMENT PLANT EFFLUENT REUSE

The City of Manvel does not currently have a wastewater reuse system. As the City continues to grow, the water demand on the City's existing and future potable water sources will continue to increase. The City is considering wastewater reuse system to alleviate the need for additional water supply as the projected population and water demands increase. As part of the *2022 Master Wastewater Plan Update*, FNI summarized the steps involved in the implementation of a reuse program.

7.1 GOALS AND MOTIVATORS FOR WATER REUSE

The main goal of the reuse water system is to conserve water. Other goals include, realizing revenue from reuse water sales and reduction of potable water infrastructure needed to meet peak demands. Motivators for implementing a non-potable water reuse system include the following:

- Projected increase in residential and commercial/industrial customer base
- Desire to extend the life of existing, City-owned water supplies
- Minimizing the need to acquire additional potable water supply
- Availability of drought-resistant water supply for the City

7.2 REUSE REGULATIONS

Reclaimed water systems are regulated by the Texas Commission on Environmental Quality (TCEQ) which has documented reuse regulations in Chapters 210 and 344. Below is a summary of the requirements defined in each chapter:

- Chapter 210; Subchapter B and C: Defines the general requirements for the production, conveyance, and use of reclaimed water. Also defines the reclaimed water quality criteria for specific uses.

- Chapter 344; Subchapter F: Defines the standards for the design, installation, and maintenance of landscape irrigation systems utilizing reclaim water.

These chapters are included in **Appendix D**. The following sections summarize the TCEQ reuse regulations including the application process for obtaining a water reuse authorization.

7.2.1 TCEQ Chapter 210; Subchapters B and C

Subchapter B of Chapter 210 defines the general requirements for the production, conveyance, and use of reclaimed water. The requirements for storing reuse water are also defined in this chapter and consist of the following rules:

- Storage ponds must be designed to prevent unauthorized discharge of reclaimed water into the any waterbody defined as being "Waters of the US"
- Storage cannot be located within the floodway unless TCEQ authorization is granted
- Storage facilities must be designed to prevent groundwater contamination
- Storage ponds must be lined with an authorized earthen or synthetic material

Subchapter C of Chapter 210 defines the reclaimed water quality criteria and approved uses. There are two types of non-potable municipal reuse water in the State of Texas that can be authorized under Section 210:

- Type I Reclaimed Water: Includes irrigation or other uses where the public may be present during irrigation or may come into contact with reclaimed water (e.g. residential irrigation, fire protection, toilet flush water).
- Type II Reclaimed Water: Includes irrigation or other areas where the public is not present during irrigation or would not come into contact with reclaimed water (e.g. cooling tower water, irrigation at wastewater facilities).

TCEQ reclaimed water criteria are shown in **Table 7-1**.

Table 7-1: Reclaimed Water Quality Standards (TCEQ Ch. 210)

Attribute	Type I	Type II	Storage Pond
$CBOD_5$ (mg/L)	5*	15*	30
Turbidity (NTU)	3*	-	-
Fecal coliform or *E.coli* (CFU/100mL)	20*/75**	200*/800**	200/800**
Enterococci*** (CFU/100mL)	4*/9**	35*/89**	35*/89**

*30-day average
** maximum single grab
***Enterococci typically apply to WWTPs that have saltwater discharges

Sampling: Type I reclaimed water uses are to be sampled twice per week, while Type II reclaimed water uses are to be sampled once per week.

Record Keeping and Reporting: Records are to be maintained for five years and the reclaimed water provider must report to TCEQ the volume of reclaimed water provided and the quality of the reclaimed water on a monthly basis.

7.2.2 TCEQ Chapter 344; Subchapter F

Subchapter F defines the standards for designing, installing, and maintaining landscape irrigation systems that utilize reclaimed water. Reclaimed water may be used for landscape irrigation if the following conditions are met:

- There is no direct contact with edible crops unless the crops will be pasteurized before consumption
- The irrigation system does not spray onto property not owned by the irrigation system owner
- The irrigation system is installed using purple components
- A sign (minimum size of eight inches by eight inch) is prominently located in the area being irrigated reading “RECLAIMED WATER – DO NOT DRINK”
- Backflow prevention of the reclaimed water supply is in accordance with the regulations of the water purveyor

7.2.3 Reclaimed Water Authorization

The TCEQ requires that municipalities submit for and obtain a Chapter 210 authorization before utilizing reclaimed water. The City of Manvel does not currently hold a Chapter 210 authorization for any of its wastewater treatment plants. The approval process requires the submission of application TCEQ-20427 with supporting documents that may include a service area map, any user water reuse contract(s), and an operation and maintenance plan.

7.3 SERVICE CONSIDERATIONS

Potential service issues must be addressed prior to the implementation or expansion of a reclaimed water system. In most cases, it is beneficial to plan to phase in the reuse system. The phasing schedule will consider the type of customer (public or private), proximity of the customer to an effluent source and the customers pressure requirements. In general, private customers will require more education on reuse regulations.

The reuse distribution system water quality also needs to be considered when developing the phasing schedule. If infrastructure is sized for ultimate non-potable water demands, and those demands are significantly higher than present water demands, the system may experience water quality problems as a result of high water age.

Another potential service issue to consider is the ability of the City to utilize existing ponds at parks where reuse water is being considered for irrigation. Using these ponds would allow the City to provide reuse water at lower pressures to the parks and will increase flexibility to match reuse demands. However, in most cases, the ponds would have to be lined to meet the TCEQ requirements for the storage of reuse water, which increases implementation costs.

7.4 REUSE WATER QUANTITY

This master plan update developed projections for wastewater flows for the purpose of sizing treatment facilities. The quantity of water available for reuse is called the maximum available safe supply and will need to be assessed during a future reuse study. **Table 7-2** summarizes flow projections from this master plan that can be utilized as part of a future analysis of the maximum available safe supply at each treatment facility.

Table 7-2: Summary of Flows for Future Reuse Analysis

Planning Period	Average Daily Flow[1][2] (MGD)			
	Central Regional WWTP	West Regional WWTP[3]	South Regional WWTP	Total
2026	1.21	1.01	-	2.22
2031	1.70	1.38	-	3.08
2041	3.62	3.81	0.95	8.38

(1) Total average daily flows by wastewater treatment facility service area as developed in this master plan. The maximum available safe supply to be assessed during a future reuse study. Maximum available safe supply is the quantity of WWTP effluent that can be relied upon year round for reuse planning purposes.
(2) Sedona Lakes and Meridiana service area flows not included.
(3) Pomona and Southfork flows treated at existing MUD WWTPs within the 10-year planning period.

7.5 REUSE WATER QUALITY

TCEQ water quality requirements for Type I and Type II reuse types are provided in **Table 7-1**. A comparison of City's wastewater treatment plant effluent quality with the TCEQ reuse requirements for Type I and Type II reuse are presented in **Figure 7-1, Figure 7-2** and **Figure 7-3**. The City WWTP effluent water quality information is obtained from the plant's daily monitoring reports downloaded from the TCEQ Enforcement and Compliance History Online (ECHO) website. **Figure 7-1** illustrate historical 5-day Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) data at the WWTP with the Type I and Type II requirements represented by the **red** solid and dashed lines, respectively.

Figure 7-2 and **Figure 7-3** illustrate the five-year E. coli water quality data for the City of Manvel (Corporate Drive) WWTP. In **Figure 7-2**, the **green** data points indicate the calculated 30-day average geometric mean E. coli levels at the WWTP discharge. In **Figure 7-3**, the **green** data points indicate the measures E.coli in the single grab samples a the WWTP discharge.

FNI recommends the City to perform an in-depth Reuse Study to evaluate the options for potential potable and non-potable reuse. If the City decides to have a reuse option, the wastewater treatment facilities need to be upgraded to produce effluent at required water quality standards.

Figure 7-1: Carbonaceous BOD (5-days) at Manvel WWTP

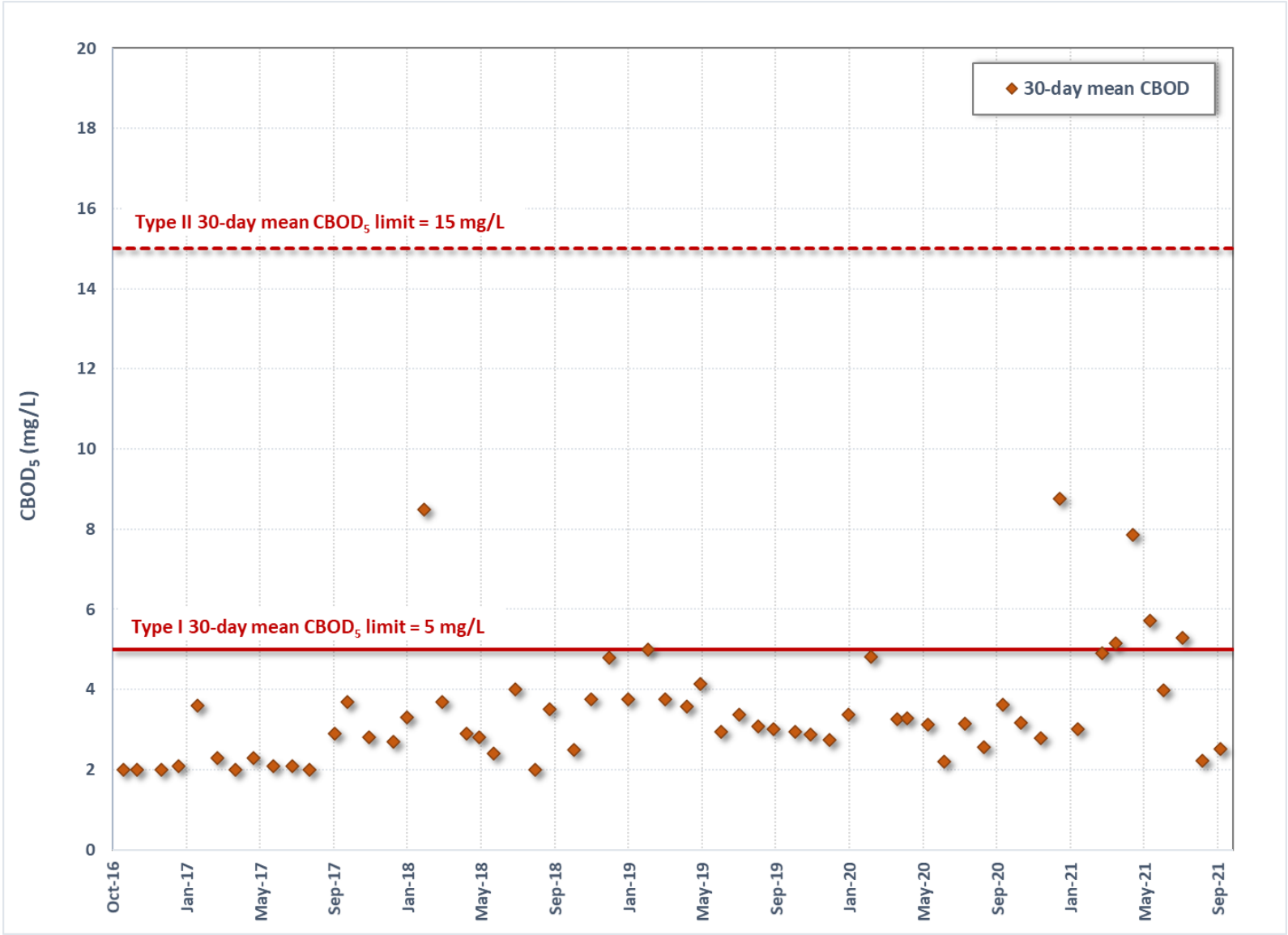


Figure 7-2: E.coli 30-day Average at Manvel WWTP

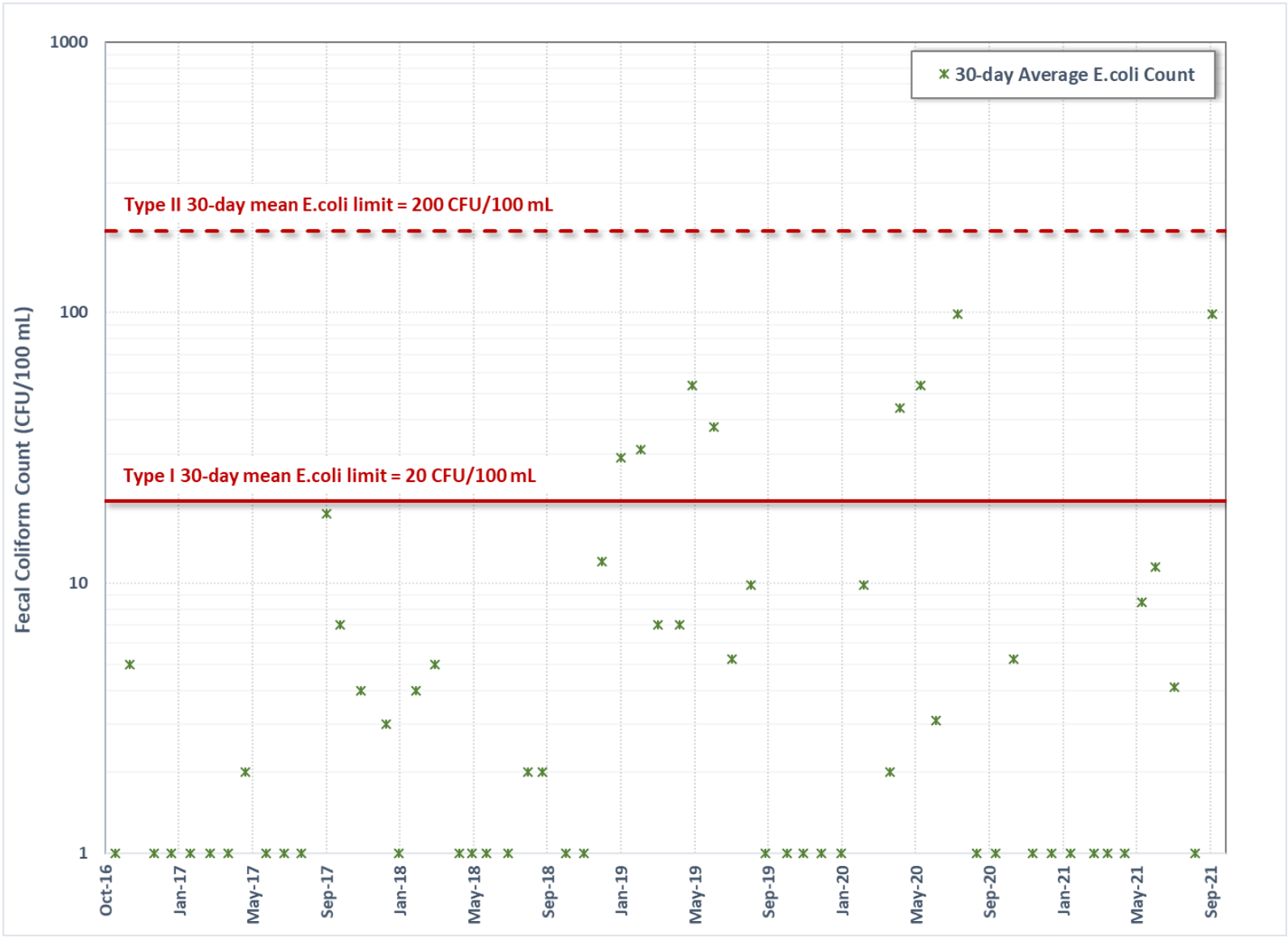
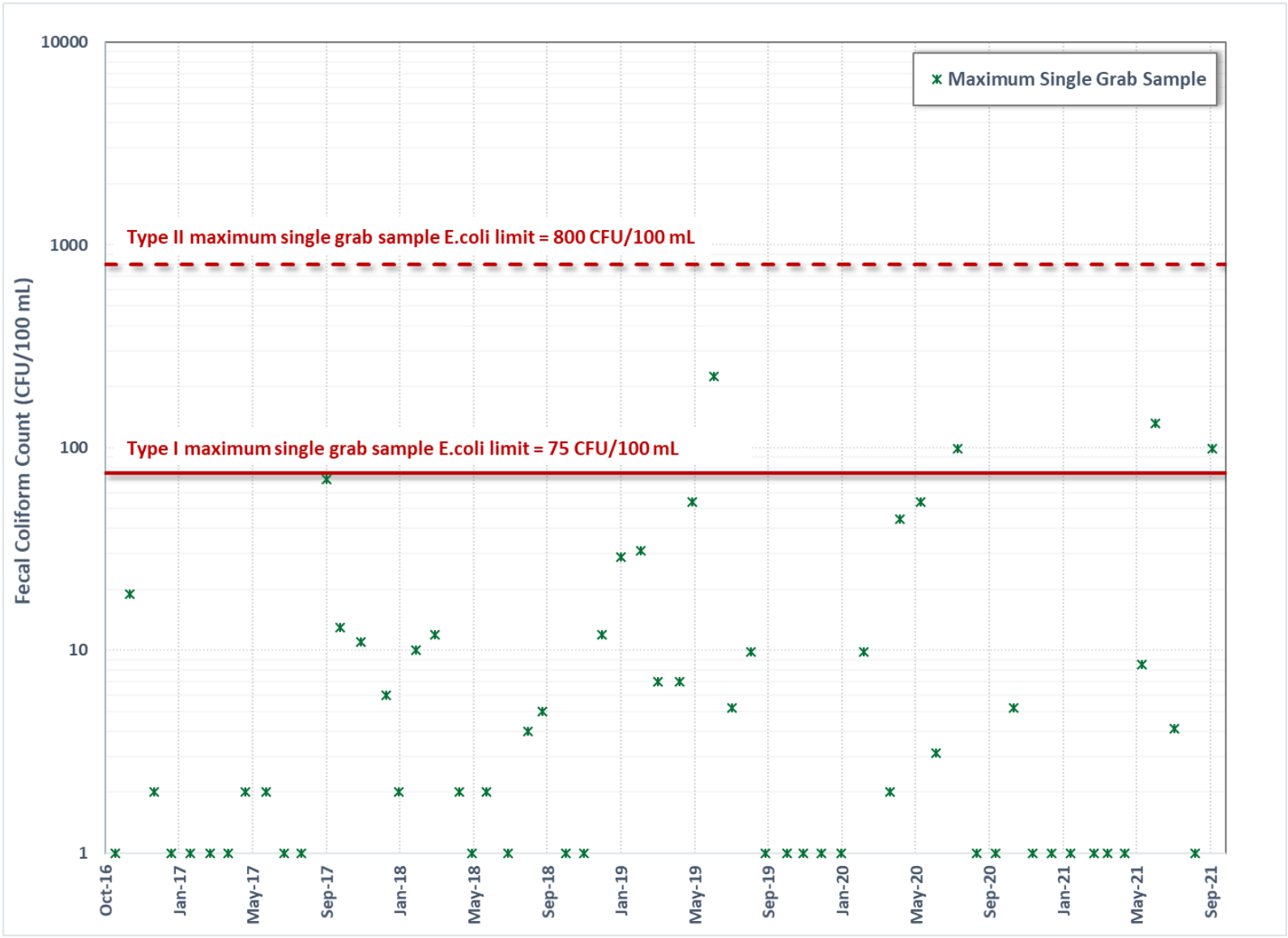


Figure 7-3: E.coli Maximum Single Grab at Manvel WWTP



8.0 WASTEWATER SYSTEM CAPITAL IMPROVEMENTS PLAN

An updated wastewater capital improvements plan (CIP) was developed for the City of Manvel. The CIP includes 21 conveyance and treatment project recommendations to facilitate the projected growth in the 20-year planning period and maintain regulatory compliance. These projects allow for regionalization of the City's wastewater collection and treatment infrastructure and provide the City with a phased CIP for collection system and treatment as the City grows.

The recommended wastewater collection and treatment projects are shown in **Table 8-3** and on **Figure 8-1**. The wastewater CIP projects are arranged by planning period (**5-year**, **10-year**, and **20-year**) as follows:

- **5-Year Projects**: These are shown **in red** and are recommended to be designed and constructed within the next 5 years (by 2026)
- **10-Year Projects**: These are shown **in blue** and are recommended to be designed and constructed within the next 10 years (by 2031)
- **20-Year Projects**: These are shown **in green** and are recommended to be designed and constructed within the next 20 years (by 2041)

All recommended infrastructure is sized to convey the projected 2041 peak wastewater flows, including an allowance for inflow and infiltration (I/I). It is recommended that these projects be constructed generally in the order presented; however, development patterns may make it necessary to construct some projects sooner than anticipated. Locations shown for new lines, lift stations, and wastewater treatment plants are generalized for hydraulic analyses. Specific alignments and sites will be determined as part of the design process. Wastewater projects currently under design or construction are shown in **orange** on **Figure 8-1.** Wastewater infrastructure to be constructed as part of future development by MUDs are shown in **purple** on **Figure 8-1**.

Planning level capital cost estimates were calculated for all recommended improvements and do not include individual service connections or subdivision lines. The costs are provided as estimates based on previous similar engineering experience in 2021 dollars and include allowances for contingency and engineering and surveying. Costs do not include easements or land acquisition, except where specifically noted.

The unit costs utilized for pipelines and manholes are shown in **Table 8-1.** Wastewater treatment costs were developed for each proposed wastewater treatment plant based on site specific information and previous similar engineering experience.

Table 8-1: Wastewater Capital Improvements Plan Unit Costs

Pipelines		Cost/Diam-in/LF
Force Mains		$15
Gravity Lines < 8-feet deep		$14
Gravity Lines 8 - 16-feet deep		$15
Gravity Lines > 16-feet deep		$16
Manholes		**Cost/Manhole**
4-ft Diameter	8-ft – 16-ft depth	$14,000
	>16ft – 24-ft depth	$18,000
	>24-ft – 30-ft depth	$22,000
5-ft Diameter	8-ft – 16-ft depth	$18,000
	>16ft – 24-ft depth	$22,000
	>24-ft – 30-ft depth	$26,000
6-ft Diameter	8-ft – 16-ft depth	$20,000
	>16ft – 24-ft depth	$25,000
	>24-ft – 30-ft depth	$30,000
Contingency		**Percentage**
All Projects		25%
Engineering, Survey, & Inspection		**Percentage**
WWTPs and Lift Stations*		20%
Gravity and Force Mains		15%

(1) Used 15% engineering and survey for Central WWTP Phases 1 and 2 planning level cost calculations.

Table 8-2 summarizes the cost of the capital improvements plan by phase and project type (Treatment or Conveyance). **Table 8-3** summarizes the individual projects in the wastewater system CIP. The following sections provide a detailed project description and purpose for each CIP project. Individual planning level opinions of probable construction cost (OPCCs) for each project in the wastewater CIP are included in **Appendix A**.

Table 8-2: Wastewater Capital Improvements Plan Summary (by Phase and Project Type)

Phase	CIP	Cost
5 -Year (by 2026)	Treatment	$26,948,900
	Conveyance	$14,801,800
	Sub-total	**$41,750,700**
10-Year (by 2031)	Treatment	$15,904,500
	Conveyance	$1,555,200
	Sub-total	**$17,459,700**
20-Year (by 2041)	Treatment	$98,182,000
	Conveyance	$59,758,700
	Sub-total	**$157,940,700**
Total 20-Year Wastewater CIP Cost		**$217,151,100**

Table 8-3: Wastewater Capital Improvements Plan Summary (by Project)

Phase	Project Number	Project Name	Cost (In 2021 Dollars)
5-Year (by 2026)	1	1.0 MGD Central Regional Wastewater Treatment Plant (Phase 1)	$26,948,900
	2	New 4.0 MGD Pollard Blvd Lift Station and 18-inch Force Main (Phase 1)	$5,494,800
	3	12/15/18/30-inch Lines through Valencia Development (Central Service Area Interceptor and Gravity System)	$8,553,200
	4	8-inch Gravity Main along McCoy Road and Lewis Lane	$753,800
		Total 2021 - 2026	**$41,750,700**
10-Year (by 2031)	5	Expansion of the Central Regional Wastewater Treatment Plant to 2.0 MGD Capacity (Phase 2)	$15,904,500
	6	12-inch Del Bello SPUR Gravity Main	$1,555,200
		Total 2027 - 2031	**$17,459,700**
20-Year (by 2041)	7	15-inch Gravity Main Along Masters Road	$1,796,700
	8	Large Avenue Lift Station Expansion to 1.8 MGD and 10-inch Force Main	$3,211,800
	9	New 1.1 MGD South Regional Wastewater Treatment Plant (Phase 1)	$26,688,000
	10	Expansion of the Central Region Wastewater Treatment Plant to 4.0 MGD Capacity (Phase 3)	$30,840,000
	11	New Pollard Boulevard Lift Station Expansion to 6.5 MGD	$2,150,100
	12	Del Bello Lift Station Expansion to 1.3 MGD	$582,500
	13	15/24-inch South Region Gravity Main	$6,069,700
	14	12/15-inch Central Region Gravity Main	$2,442,600
	15	New 4.0 MGD East Regional Lift Station and 14-inch Force Main	$8,877,000
	16	12-inch Gravity Main along Highway 6	$2,071,000
	17	West Regional Wastewater Treatment Plant Expansion to 4.0 MGD	$40,654,000
	18	West Service Area Wastewater Treatment Plant Consolidation and Gravity Main (Phase 1)	$18,201,600
	19	West Service Area Wastewater Treatment Consolidation (Phase 2)	$3,954,300
	20	21/24-inch Gravity Main along Mustang Bayou	$6,224,300
	21	New 1.0 MGD Lift Station, 8-inch Force Main and 15-inch Gravity Line	$4,177,100
		Total 2032 - 2041	**$157,940,700**
		Total Capacity Wastewater CIP Cost	**$217,151,100**

FIGURE 8-1
CITY OF MANVEL
MASTER WASTEWATER PLAN UPDATE
CAPITAL IMPROVEMENTS RECOMMENDATIONS

Detail A

Southfork WWTP
Permitted Capacity
Average Daily Flow = 0.48 MGD
Peak Flow = 1.9 MGD
Decommission WWTP (2041)
New Southfork LS
Firm Capacity = 1.8 MGD (2041)

Pomona WWTP
Permitted Capacity
Average Daily Flow = 0.25 MGD
Peak Flow = 1.0 MGD
Decommission WWTP (2041)
New Pomona LS
Firm Capacity = 6.0 MGD (2041)

Sedona Lakes WWTP
Permitted Capacity
Average Daily Flow = 0.30 MGD
Peak Flow = 1.2 MGD
Proposed Average Daily Flow = 0.6 MGD (2026)

Proposed West Service Area Regional Wastewater Treatment Plant
Permitted Capacity = 2.0 MGD (Planned)
Permitted Capacity = 4.0 MGD (2041)

Rodeo Palms WWTP
Permitted Capacity
Average Daily Flow = 0.45 MGD
Decommission WWTP (2026)

Town Center WWTP
Permitted Capacity
Average Daily Flow = 0.15 MGD (Under Construction)
Decommission WWTP (2041)

Central Regional Wastewater Treatment Plant
Permitted Capacity = 1.0 MGD (2026)
Permitted Capacity = 2.0 MGD (2031)
Permitted Capacity = 4.0 MGD (2041)

Corporate Drive Wastewater Treatment Plant
Permitted Capacity
Average Daily Flow = 0.50 MGD
Peak Flow = 2.0 MGD
Decommission 0.5 MGD
Package Plant by 2031

MUD No.56 WWTP
Average Dailey Flow = 0.399 MGD (Under Construction)

Proposed South Wastewater Treatment Plant
Permitted Capacity = 1.1 MGD (2041)

Force Main From Charlotte Street LS (7)
Existing 6" Force Main

Force Main From Pollard Blvd LS
18" Force Main (2026)

Corporate Drive LS
Install Junction Box and Decommission LS (2026)

Force Main From Large Ave LS
Existing 6" Force Main
Replacement 10" Force Main (2041)

Force Main From East Regional Lift Station
14" Force Main (2041)

Influent Lift Station

Del Bello LS (9)
Firm Capacity = 0.76 MGD
Firm Capacity = 1.3 MGD (2041)

New Pollard Blvd LS
Firm Capacity = 4.0 MGD (2026)
Firm Capacity = 6.5 MGD (2041)

BlueWater Lakes LS (8)
Firm Capacity = 0.41 MGD
Flow Diversion to New Pollard Lift Station

Lakeland LS (7)
Firm Capacity = 0.79 MGD
Buildout Firm Capacity = 1.03 MGD

McCoy Road LS (3)
Firm Capacity = 0.45 MGD
Decommission by 2026
3" Force Main to be Decommissioned

Large Ave LS (4)
Firm Capacity = 0.44 MGD
Firm Capacity = 1.8 MGD (2041)
Upsize FM to 10" (2041)

Lewis Lane LS (6)
Firm Capacity = 0.29 MGD

Rogers Road LS (5)
Firm Capacity = 0.62 MGD

West Regional WWTP Influent LS
Firm Capacity = 12.0 MGD (2041)

New Re-Pump Lift Station
Firm Capacity = 1.0 MGD (2041)

East Regional Lift Station
Firm Capacity = 4.0 MGD (2041)

Presidio Flows to 24" line

Private LS

See Detail A

Newport Lakes
Yanni Palms
Rodeo Palms
Foxtail Palms
MUD #47
Town Center
Southfork
Pomona
Sedona Lakes
Fairway Village
Lakepointe
Southwyck
Sedgewood
Ravenwood Estates
Del Bello Lakes
Presidio
Valencia
Lakeland
BlueWater Lakes
Meridiana

West Service Area
Central Service Area
East Service Area
South Service Area

City of Pearland
City of Alvin
City of Iowa Colony

The utility alignments and wastewater treatment plant locations shown on this figure are for illustration purposes only and do not set the alignments or locations. The locations of utility alignments and wastewater treatment plants will be determined in final design.

PROPOSED WWTP SERVICE AREAS
- Central Service Area
- East Service Area
- Sedona Lakes Service Area
- South Service Area
- West Service Area
- Meridiana

LEGEND

Developer Improvements
- Wastewater Treatment Plant

Under Design/Construction
- Wastewater Treatment Plant

2026 Proposed Improvements
- Lift Station
- Wastewater Treatment Plant
- Gravity Main
- Force Main

2031 Proposed Improvements
- Wastewater Treatment Plant
- Gravity Main
- Force Main

2041 Proposed Improvements
- Lift Station
- Wastewater Treatment Plant
- Gravity Main
- Force Main

Existing System
- Wastewater Treatment Plant
- 8" and Smaller Wastewater Line
- 10" and Larger Wastewater Line
- Force Main
- Future Wastewater Treatment Facility Sites

- Road
- Railroad
- Stream
- Lake/Pond
- Meridiana Detention Pond
- Manvel City Limit
- Other City Limit
- ETJ Boundary

FREESE AND NICHOLS

MANVEL CITY ON THE RISE

0 1,500 3,000 SCALE IN FEET

0 250 500 SCALE IN FEET

Created By Freese and Nichols, Inc.
Job No.: DFF19041
Location: H:\W_WW_PLANNING\01_DELIVERABLES\02_FINAL_REPORT\[Figure_8-1]-Wastewater_CIP_.mxd
Updated: Monday, January 3, 2022 3:37:46 PM

8.1 FIVE-YEAR WASTEWATER CONVEYANCE AND TREATMENT PROJECTS (THROUGH 2026)

Project 1 - 1.0 MGD Central Regional Wastewater Treatment Plant (Phase 1)

Detailed description: This project includes the construction of a new 1.0 MGD Central Region Wastewater Treatment Plan (WWTP) at the Corporate Drive site. In conjunction with the existing 0.5 MGD package plant, this project will result in 1.5 MGD average daily flow treatment capacity in the Central Region. This WWTP will be expandable to 2.0 MGD by 2031 (**Project 5**). The existing Corporate Drive Lift Station will be decommissioned and converted into a junction box that will convey the projected wastewater flows to the new influent lift station through a 54-inch gravity line. The new influent lift station will pump flows to both the existing 0.5 MGD Package Plant and the proposed 1.0 MGD Central WWTP until the package plant is decommissioned (**Project 5**).

Purpose: The wastewater flow projections show that additional wastewater treatment is required beyond the 0.5 MGD capacity currently in the Central Service Area at the City of Manvel (Corporate Drive) WWTP. This 1.0 MGD expansion is required in the near-term to serve wastewater flows generated in the Central Service Area.

Project 2 - New 4.0 MGD Pollard Blvd Lift Station and 18-inch Force Main (Phase 1)

Detailed description: This project includes the construction of a wet well sized for a firm capacity of 6.5 MGD. Startup firm pumping capacity is projected to be 4.0 MGD. This project also includes the construction of a new 18-inch force main to the proposed Central Treatment Plant influent lift station (**Project 1**).

Purpose: This project is sized to convey the projected peak 2041 wastewater flows from the City Center and Valencia Developments, as well as additional City connections north and east of these developments. The lift station wet well and startup firm pumping capacity (4.0 MGD firm) includes the capacity to serve flows generated in the Bluewater Lakes development. As part of this project, it is anticipated that the Bluewater Lakes LS No. 1 will be decommissioned, and the corresponding wastewater flows conveyed to the New Pollard Blvd. Lift Station.

Project 3 - 12/15/18/30-inch Lines through Valencia Development (Central Service Area Interceptor and Gravity System)

Detailed description: This project includes the construction of a 12-inch/15-inch/18-inch/30-inch gravity main through the Manvel City Center and Valencia developments.

Purpose: This project will serve City customer connections in the Central Service Area including Manvel City Center and Valencia developments as well as adjacent areas to the north and west. This project is sized to convey the projected peak wastewater flows in this area through 2041.

Project 4 - 8-inch Gravity Main along McCoy Road and Lewis Lane

Detailed description: This project includes the construction of 8-inch consolidation gravity lines along McCoy Road and Lewis Lane to Palmetto Street. This project also includes decommissioning of the existing McCoy Lift Station and associated 3-inch force main.

Purpose: This project will allow the McCoy Road Lift Station to be decommissioned, and the wastewater flows to be conveyed to the recently constructed 15-inch gravity main along Palmetto Street.

8.2 TEN-YEAR WASTEWATER CONVEYANCE AND TREATMENT PROJECTS (THROUGH 2031)

Project 5 - Expansion of the Central Regional Wastewater Treatment Plant to 2.0 MGD Capacity (Phase 2)

Detailed description: This project includes the construction of 1.0 MGD of additional treatment capacity at the Central WWTP and decommissioning of the existing 0.5 MGD package plant. This expansion will result in a total of 2.0 MGD average day flow treatment capacity at the Central WWTP. This WWTP will be expandable to 4.0 MGD by 2041 (**Project 7**).

Purpose: The wastewater flow projections show that additional wastewater treatment is required beyond the capacity of the Proposed Central WWTP (**Project 1**) and the existing City of Manvel (Corporate Drive) WWTP. This expansion will be required in the 10-year planning period to serve the projected wastewater flows in the Central Service Area.

Project 6 - 12-inch Del Bello SPUR Gravity Main

Detailed description: This project includes the construction of 12-inch gravity main along Del Bello SPUR in the Central Service Area.

Purpose: This project is sized to convey projected future wastewater flows from the vicinity of Del Bello SPUR to the Central Regional WWTP.

8.3 TWENTY-YEAR WASTEWATER CONVEYANCE AND TREATMENT PROJECTS (THROUGH 2041)

Project 7 - 15-inch Gravity Main Along Masters Road

Detailed description: This project includes the construction of a 15-inch gravity main along Masters Road.

Purpose: This project will allow existing septic connections to connect to the City's wastewater system and also serve future projected wastewater flows in the Central Service Area to the north of Highway 6 near Masters Road.

Project 8 - Large Avenue Lift Station Expansion to 1.8 MGD and 10-inch Force Main

Detailed description: This project includes the expansion of the Large Avenue Lift Station to 1.8 MGD (firm pumping capacity), and a new 10-inch force main replacing the existing 6-inch force main. This project includes the construction of a new wet well and additional pumping to replace the existing lift station.

Purpose: The existing Large Avenue Lift Station (0.44 MGD firm capacity) is not sized to convey projected future peak wastewater flows in the Central Region along FM 1128 and in adjacent areas through 2041.

Project 9 - New 1.1 MGD South Regional Wastewater Treatment Plant (Phase 1)

Detailed description: This project includes the construction of a new South Service Area Regional Wastewater Treatment Plant (WWTP) with 1.1 MGD average daily flow treatment capacity. This planning level cost does not include land acquisition.

Purpose: This project is sized to treat the projected wastewater flows generated in the South Service Area through 2041.

Project 10 - Expansion of the Central Region Wastewater Treatment Plant to 4.0 MGD Capacity (Phase 3)

Detailed description: This project includes the construction of 2.0 MGD additional treatment capacity at the Central WWTP. This expansion will result in a 4.0 MGD average daily flow treatment capacity at the Central WWTP.

Purpose: This WWTP expansion is sized to serve wastewater flows generated in the Central Service Area and also diverted flows from the East Region through the East Regional Lift Station (**Project 14**) through 2041.

Project 11 - New Pollard Boulevard Lift Station Expansion to 6.5 MGD

Detailed description: This project includes the construction of an expansion at the Pollard Boulevard Lift Station to increase the firm pumping capacity from 4.0 MGD to 6.5 MGD. This project does not include construction of a new wet well and force main. The wet well and force main recommended in the Phase 1 expansion (**Project 2**) are sized for this 6.5 MGD expansion.

Purpose: This project will serve additional City customer connections in the Central Service Area north and east of the currently identified and anticipated developments. This project is sized to convey the projected peak wastewater flows in this area through 2041.

Project 12 - Del Bello Lift Station Expansion to 1.3 MGD

Detailed description: This project includes the expansion of the existing Del Bello Lift Station to firm pumping capacity of 1.3 MGD. The costs include pump, electrical, and piping expansion only.

Purpose: This expansion includes pump, electrical, and piping only. The existing wet well (diameter of 10-feet, depth of 29-feet) is sized to serve this growth.

Project 13 - 15/24-inch South Region Gravity Main

Detailed description: This project consists of 15-inch and 24-inch gravity mains South of Highway 6 to the Proposed South WWTP (**Project 9**).

Purpose: This project will serve future City connections in the South Service Area south of Highway 6. This project is sized to convey the projected peak wastewater flows through 2041.

Project 14 - 12/15-inch Central Region Gravity Main

Detailed description: This project includes the construction of 12-inch and 15-inch gravity lines north of City Center in the Central Service Area. The newly constructed lines will connect to the proposed 12-inch and 18-inch lines part of **Project 3**.

Purpose: This project is sized to convey projected future wastewater flows in the north and east portion of the Central Service Area by 2041.

Project 15 - New 4.0 MGD East Regional Lift Station and 14-inch Force Main

Detailed description: This project includes the construction of a 4.0 MGD regional lift station for the East Service Area and a 14-inch force main. This planning level cost does not include land acquisition.

Purpose: This project is sized to convey the projected future wastewater flows generated in the East Service Area to the Central WWTP through 2041.

Project 16 - 12-inch Gravity Main along Highway 6

Detailed description: This project includes the construction of a 12-inch gravity main along Highway 6.

Purpose: This project is sized to convey projected future wastewater flows in the East Service Area along Highway 6 to the new East Regional Lift Station.

Project 17 - West Regional Wastewater Treatment Plant Expansion to 4.0 MGD

Detailed description: This project includes the construction of 2.0 MGD additional treatment capacity at the West Regional WWTP. This project also includes the construction of a 12.0 MGD West Regional WWTP Influent Lift Station and a 24-inch force main.

Purpose: This construction of the West Regional WWTP and Influent Lift Station is sized to convey and treat the projected wastewater flows from the West Service Area through 2041. This expansion will convey and treat wastewater flows from the Pomona and Southfork Developments and additional City customer connections in the West Service Area via the West Service Area Treatment Consolidation Projects (**Project 18** and **Project 19**).

Project 18 - West Service Area Wastewater Treatment Plant Consolidation and Gravity Main (Phase 1)

Detailed description: This project includes the decommissioning of the Pomona WWTP, the construction of a new 6.0 MGD Pomona Lift Station (firm pumping capacity) and 18-inch force main, and the construction of a 36/42-inch trunk line to the West Regional WWTP Influent Lift Station.

Purpose: This project will convey the wastewater flows from the Pomona and Southfork Developments to the West Service Area Regional WWTP Influent Lift Station and WWTP. The existing Pomona WWTP does not have the long-term service life that the West Regional WWTP will have. Long-term, it will be more efficient for the City to operate fewer WWTPs. This project will decommission the Pomona WWTP in accordance with TCEQ regulations. Note that this project is also sized to re-pump the peak wastewater flows from the Southfork Development (**Project 19**).

Project 19 - West Service Area Wastewater Treatment Consolidation (Phase 2)

Detailed description: This project includes the decommissioning of the Southfork WWTP, and the construction of a new Southfork 1.8 MGD Lift Station (firm pumping capacity) and 10-inch force main.

Purpose: This project will pump the wastewater flows from the Southfork WWTP to the new Pomona Lift Station (**Project 18**), whereby the wastewater flow will be conveyed to the West Service Area Regional WWTP Influent Lift Station. The existing Southfork WWTP does not have the long-term service life that the West WWTP will have. Long-term, it will be more efficient for the City to operate fewer WWTPs. This project will decommission the Southfork WWTP in accordance with TCEQ regulations.

Project 20 - 21/24-inch Gravity Main along Mustang Bayou

Detailed description: This project includes the construction of new 21-inch and 24-inch trunk line along Mustang Bayou.

Purpose: This project is sized to convey the projected future (2041) peak wastewater flows from the East Service Area north of Highway 6 to the East Regional Lift Station.

Project 21 - New 1.0 MGD Lift Station, 8-inch Force Main and 15-inch Gravity Line

Detailed description: This project includes the construction of a 15-inch gravity main, a new 1.0 MGD lift station and an 8-inch force main along Mustang Bayou.

Purpose: This project is sized to convey the projected future (2041) peak wastewater projected peak wastewater flows from the East Service Area north of Highway 6 to the East Regional Lift Station.

APPENDIX A
Wastewater System CIP
Planning Level Opinion of Probable Construction Cost (OPCC) Sheets

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 1 **5-Year**

Project Name:	**1.0 MGD Central Regional Wastewater Treatment Plant (Phase 1)**

Project Description:

This project includes the construction of a new 1.0 MGD Central Region Wastewater Treatment Plan (WWTP) at the Corporate Drive site. In conjunction with the existing 0.5 MGD package plant, this project will result in 1.5 MGD average daily flow treatment capacity in the Central Region. This WWTP will be expandable to 2.0 MGD by 2031 (Project 5). The existing Corporate Drive Lift Station will be decommissioned and converted into a junction box that will convey the projected wastewater flows to the new influent lift station through a 54-inch gravity line. The new influent lift station will pump flows to both the existing 0.5 MGD Package Plant and the proposed 1.0 MGD Central WWTP until the package plant is decommissioned (Project 5).

Project Drivers:

The wastewater flow projections show that additional wastewater treatment is required beyond the 0.5 MGD capacity currently in the Central Service Area at the City of Manvel (Corporate Drive) WWTP. This 1.0 MGD expansion is required in the near-term to serve wastewater flows generated in the Central Service Area.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	1.0 MGD Central WWTP	1	LS	$ 17,840,000	$ 17,840,000
2	54" Pipe > 16 feet deep	500	LF	$ 864	$ 432,000
3	72" Diameter Manhole (16' - 24')	3	EA	$ 25,000	$ 75,000
4	54/24 in Corporate Drive Junction Box	1	EA	$ 400,000	$ 400,000
				SUBTOTAL:	**$ 18,747,000**
				CONTINGENCY 25%	$ 4,686,800
				SUBTOTAL:	**$ 23,433,800**
				ENG/SURVEY 15%	$ 3,515,100
				SUBTOTAL:	**$ 26,948,900**
				Estimated Project Total:	**$ 26,948,900**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 2 **5-Year**

Project Name:	**New 4.0 MGD Pollard Blvd Lift Station and 18-inch Force Main (Phase 1)**

Project Description:

This project includes the construction of a wet well sized for a firm capacity of 6.5 MGD. Startup firm pumping capacity is projected to be 4.0 MGD. This project also includes the construction of a new 18-inch force main to the proposed Central Treatment Plant influent lift station (Project 1).

Project Drivers:

This project is sized to convey the projected peak 2041 wastewater flows from the City Center and Valencia Developments, as well as additional City connections north and east of these developments. The lift station wet well and startup firm pumping capacity (4.0 MGD firm) includes the capacity to serve flows generated in the Bluewater Lakes development. As part of this project, it is anticipated that the Bluewater Lakes LS No. 1 will be decommissioned and the corresponding wastewater flows conveyed to the New Pollard Blvd. Lift Station.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Pollard Blvd LS Wet Well	1	LS	$ 761,200	$ 761,200
2	Pollard Blvd LS Pumps	1	LS	$ 462,000	$ 462,000
3	Pollard Blvd LS Electrical	1	LS	$ 462,000	$ 462,000
4	Pollard Blvd LS Generator	1	LS	$ 429,000	$ 429,000
5	Pollard Blvd LS Piping and Valves	1	LS	$ 176,000	$ 176,000
6	18" Force Main < 8 feet deep	4,900	LF	$ 270	$ 1,323,000
7	Decommission Lift Station	1	EA	$ 50,000	$ 50,000
				SUBTOTAL:	**$ 3,663,200**
		CONTINGENCY		25%	$ 915,800
				SUBTOTAL:	**$ 4,579,000**
		ENG/SURVEY		20%	$ 915,800
				SUBTOTAL:	**$ 5,494,800**
				Estimated Project Total:	**$ 5,494,800**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 3 **5-Year**

Project Name:	**12/15/18/30-inch Lines through Valencia Development (Central Service Area Interceptor and Gravity System)**

Project Description:

This project includes the construction of a 12-inch/15-inch/18-inch/30-inch gravity main through the Manvel City Center and Valencia developments.

Project Drivers:

This project will serve City customer connections in the Central Service Area including Manvel City Center and Valencia developments as well as adjacent areas to the north and west. This project is sized to convey the projected peak wastewater flows in this area through 2041.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" Pipe > 16 feet deep	3,300	LF	$ 192	$ 633,600
2	15" Pipe 8- 16 feet deep	1,000	LF	$ 225	$ 225,000
3	18" Pipe > 16 feet deep	5,600	LF	$ 360	$ 2,016,000
4	30" Pipe > 16 feet deep	4,300	LF	$ 480	$ 2,064,000
5	48" Diameter Manhole (16' - 24')	8	EA	$ 18,000	$ 144,000
6	60" Diameter Manhole (16' - 24')	10	EA	$ 22,000	$ 220,000
7	72" Diameter Manhole (16' - 24')	6	EA	$ 25,000	$ 150,000
8	Pavement Repair	1,420	LF	$ 90	$ 127,800
9	24" Boring and Casing	200	LF	$ 528	$ 105,600
10	30" Boring and Casing	400	LF	$ 660	$ 264,000
				SUBTOTAL:	**$ 5,950,000**
			CONTINGENCY	25%	$ 1,487,500
				SUBTOTAL:	**$ 7,437,500**
			ENG/SURVEY	15%	$ 1,115,700
				SUBTOTAL:	**$ 8,553,200**
				Estimated Project Total:	**$ 8,553,200**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 4 **5-Year**

Project Name: 8-inch Gravity Main along McCoy Road and Lewis Lane

Project Description:

This project includes the construction of 8-inch consolidation gravity lines along McCoy Road and Lewis Lane to Palmetto Street. This project also includes decommissioning of the existing McCoy Lift Station and associated 3-inch force main.

Project Drivers:

This project will allow the McCoy Road Lift Station to be decommissioned, and the wastewater flows to be conveyed to the recently constructed 15-inch gravity main along Palmetto Street.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	8" Pipe 8- 16 feet deep	2,700	LF	$ 120	$ 324,000
2	48" Diameter Manhole (8' - 16')	8	EA	$ 14,000	$ 112,000
3	Decommission Lift Station	1	EA	$ 50,000	$ 50,000
4	Pavement Repair	425	LF	$ 90	$ 38,250
				SUBTOTAL:	**$ 524,300**
		CONTINGENCY		25%	$ 131,100
				SUBTOTAL:	**$ 655,400**
		ENG/SURVEY		15%	$ 98,400
				SUBTOTAL:	**$ 753,800**
				Estimated Project Total:	**$ 753,800**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 5 **10-Year**

Project Name:	**Expansion of the Central Regional Wastewater Treatment Plant to 2.0 MGD Capacity (Phase 2)**

Project Description:

This project includes the construction of 1.0 MGD of additional treatment capacity at the Central WWTP and decommissioning of the existing 0.5 MGD package plant. This expansion will result in a total of 2.0 MGD average day flow treatment capacity at the Central WWTP. This WWTP will be expandable to 4.0 MGD by 2041 (Project 7).

Project Drivers:

The wastewater flow projections show that additional wastewater treatment is required beyond the capacity of the Proposed Central WWTP (Project 1) and the existing Corporate Drive WWTP. This expansion will be required in the 10-year planning period to serve the projected wastewater flows in the Central Service Area.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	2.0 MGD Central WWTP (1.0 MGD Expansion)	1	LS	$ 11,064,000	$ 11,064,000
				SUBTOTAL:	**$ 11,064,000**
				CONTINGENCY 25%	$ 2,766,000
				SUBTOTAL:	**$ 13,830,000**
				ENG/SURVEY 15%	$ 2,074,500
				SUBTOTAL:	**$ 15,904,500**
				Estimated Project Total:	**$ 15,904,500**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 6 **10-Year**

Project Name: **12-inch Del Bello SPUR Gravity Main**

Project Description:

This project includes the construction of 12-inch gravity main along Del Bello SPUR in the Central Service Area.

Project Drivers:

This project is sized to convey projected future wastewater flows from the vicinity of Del Bello SPUR to the Central Regional WWTP.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" Pipe 8- 16 feet deep	2,854	LF	$ 180	$ 513,630
2	48" Diameter Manhole (8' - 16')	7	EA	$ 14,000	$ 98,000
3	12" Pipe > 16 feet deep	1,430	LF	$ 192	$ 274,560
4	48" Diameter Manhole (16' - 24')	4	EA	$ 18,000	$ 72,000
5	24" Boring and Casing	200	LF	$ 528	$ 105,600
6	Pavement Repair	200	LF	$ 90	$ 18,000
				SUBTOTAL:	**$ 1,081,800**
		CONTINGENCY		25%	$ 270,500
				SUBTOTAL:	**$ 1,352,300**
		ENG/SURVEY		15%	$ 202,900
				SUBTOTAL:	**$ 1,555,200**
				Estimated Project Total:	**$ 1,555,200**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 7 **Phase:** 20-Year

Project Name: 15-inch Gravity Main Along Masters Road

Project Description:

This project includes the construction of a 15-inch gravity main along Masters Road.

Project Drivers:

This project will allow existing septic connections to connect to the City's wastewater system and also serve future projected wastewater flows in the Central Service Area to the north of Highway 6 near Masters Road.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	15" Pipe > 16 feet deep	3,800	LF	$ 240	$ 912,000
2	60" Diameter Manhole (16' - 24')	9	EA	$ 22,000	$ 198,000
3	Pavement Repair	380	LF	$ 90	$ 34,200
4	24" Boring and Casing	200	LF	$ 528	$ 105,600
				SUBTOTAL:	**$ 1,249,800**
				CONTINGENCY 25%	$ 312,500
				SUBTOTAL:	**$ 1,562,300**
				ENG/SURVEY 15%	$ 234,400
				SUBTOTAL:	**$ 1,796,700**
				Estimated Project Total:	**$ 1,796,700**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 8 **Phase:** 20-Year

Project Name: Large Avenue Lift Station Expansion to 1.8 MGD and 10-inch Force Main

Project Description:

This project includes the expansion of the Large Avenue Lift Station to 1.8 MGD (firm pumping capacity), and a new 10-inch force main replacing the existing 6-inch force main. This project includes the construction of a new wet well and additional pumping to replace the existing lift station.

Project Drivers:

The existing Large Avenue Lift Station (0.44 MGD firm capacity) is not sized to convey projected future peak wastewater flows in the Central Region along FM 1128 and in adjacent areas through 2041.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Large Ave Wet Well Replacement	1	LS	$ 585,200	$ 585,200
2	Large Ave Pumps	1	LS	$ 207,900	$ 207,900
3	Large Ave Electrical	1	LS	$ 213,400	$ 213,400
4	Large Ave Generator	1	LS	$ 118,800	$ 118,800
5	Large Ave Piping and Valves	1	LS	$ 75,900	$ 75,900
6	10" Force Main < 8 feet deep	5,500	LF	$ 150	$ 825,000
7	Pavement Repair	300	LF	$ 90	$ 27,000
8	20" Boring and Casing	200	LF	$ 440	$ 88,000
				SUBTOTAL:	**$ 2,141,200**
			CONTINGENCY	25%	$ 535,300
				SUBTOTAL:	**$ 2,676,500**
			ENG/SURVEY	20%	$ 535,300
				SUBTOTAL:	**$ 3,211,800**
				Estimated Project Total:	**$ 3,211,800**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 9 **Phase:** 20-Year

Project Name: New 1.1 MGD South Regional Wastewater Treatment Plant (Phase 1)

Project Description:

This project includes the construction of a new South Service Area Regional Wastewater Treatment Plant (WWTP) with 1.1 MGD average daily flow treatment capacity. This planning level cost does not include land acquisition.

Project Drivers:

This project is sized to treat the projected wastewater flows generated in the South Service Area through 2041.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	1.1 MGD South WWTP	1	LS	$ 17,792,000	$ 17,792,000
				SUBTOTAL:	**$ 17,792,000**
				CONTINGENCY 25%	$ 4,448,000
				SUBTOTAL:	**$ 22,240,000**
				ENG/SURVEY 20%	$ 4,448,000
				SUBTOTAL:	**$ 26,688,000**
				Estimated Project Total:	**$ 26,688,000**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 10 **Phase:** 20-Year

Project Name: Expansion of the Central Region Wastewater Treatment Plant to 4.0 MGD Capacity (Phase 3)

Project Description:

This project includes the construction of 2.0 MGD additional treatment capacity at the Central WWTP. This expansion will result in a 4.0 MGD average daily flow treatment capacity at the Central WWTP.

Project Drivers:

This WWTP expansion is sized to serve wastewater flows generated in the Central Service Area and also diverted flows from the East Region through the East Regional Lift Station (Project 14) through 2041.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	4.0 MGD Central WWTP (2.0 MGD Expansion)	1	LS	$ 20,560,000	$ 20,560,000
				SUBTOTAL:	**$ 20,560,000**
				CONTINGENCY 25%	$ 5,140,000
				SUBTOTAL:	**$ 25,700,000**
				ENG/SURVEY 20%	$ 5,140,000
				SUBTOTAL:	**$ 30,840,000**
				Estimated Project Total:	**$ 30,840,000**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 11 **Phase:** 20-Year

Project Name: New Pollard Boulevard Lift Station Expansion to 6.5 MGD

Project Description:

This project includes the construction of an expansion at the Pollard Boulevard Lift Station to increase the firm pumping capacity from 4.0 MGD to 6.5 MGD. This project does not include construction of a new wet well and force main. The wet well and force main recommended in the Phase 1 expansion (Project 2) are sized for this 6.5 MGD expansion.

Project Drivers:

This project will serve additional City customer connections in the Central Service Area north and east of the currently identified and anticipated developments. This project is sized to convey the projected peak wastewater flows in this area through 2041.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Pollard Blvd LS New Pumps	1	LS	$ 751,300	$ 751,300
2	Pollard Blvd LS New Electrical	1	LS	$ 682,000	$ 682,000
				SUBTOTAL:	**$ 1,433,300**
				CONTINGENCY 25%	$ 358,400
				SUBTOTAL:	**$ 1,791,700**
				ENG/SURVEY 20%	$ 358,400
				SUBTOTAL:	**$ 2,150,100**
				Estimated Project Total:	**$ 2,150,100**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 12 **Phase:** 20-Year

Project Name: Del Bello Lift Station Expansion to 1.3 MGD

Project Description:

This project includes the expansion of the existing Del Bello Lift Station to firm pumping capacity of 1.3 MGD. The costs include pump, electrical, and piping expansion only.

Project Drivers:

This expansion includes pump, electrical, and piping only. The existing wet well (diameter of 10-feet, depth of 29-feet) is sized to serve this growth.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Del Bello Pumps	1	LS	$ 150,700	$ 150,700
2	Del Bello Electrical	1	LS	$ 169,400	$ 169,400
3	Del Bello Piping and Valves	1	LS	$ 68,200	$ 68,200
				SUBTOTAL:	**$ 388,300**
			CONTINGENCY	25%	$ 97,100
				SUBTOTAL:	**$ 485,400**
			ENG/SURVEY	20%	$ 97,100
				SUBTOTAL:	**$ 582,500**
				Estimated Project Total:	**$ 582,500**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 13 **Phase:** 20-Year

Project Name: 15/24-inch South Region Gravity Main

Project Description:

This project consists of 15-inch and 24-inch gravity mains South of Highway 6 to the Proposed South WWTP (Project 9).

Project Drivers:

This project will serve future City connections in the South Service Area south of Highway 6. This project is sized to convey the projected peak wastewater flows through 2041.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	15" Pipe 8- 16 feet deep	5,200	LF	$ 225	$ 1,170,000
2	24" Pipe > 16 feet deep	6,000	LF	$ 384	$ 2,304,000
3	60" Diameter Manhole (8' - 16')	12	EA	$ 18,000	$ 216,000
4	60" Diameter Manhole (16' - 24')	9	EA	$ 22,000	$ 198,000
5	38" Boring and Casing	400	LF	$ 836	$ 334,400
				SUBTOTAL:	**$ 4,222,400**
				CONTINGENCY 25%	$ 1,055,600
				SUBTOTAL:	**$ 5,278,000**
				ENG/SURVEY 15%	$ 791,700
				SUBTOTAL:	**$ 6,069,700**
				Estimated Project Total:	**$ 6,069,700**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 14 **Phase:** 20-Year

Project Name: 12/15-inch Central Region Gravity Main

Project Description:

This project includes the construction of 12-inch and 15-inch gravity lines north of City Center in the Central Service Area. The newly constructed lines will connect to the proposed 12-inch and 18-inch lines part of Project 3.

Project Drivers:

This project is sized to convey projected future wastewater flows in the north and east portion of the Central Service Area by 2041.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" Pipe 8- 16 feet deep	2,900	LF	$ 180	$ 522,000
2	15" Pipe > 16 feet deep	2,900	LF	$ 240	$ 696,000
3	48" Diameter Manhole (8' - 16')	7	EA	$ 14,000	$ 98,000
4	60" Diameter Manhole (16' - 24')	7	EA	$ 22,000	$ 154,000
5	24" Boring and Casing	400	LF	$ 528	$ 211,200
6	Pavement Repair	200	LF	$ 90	$ 18,000
				SUBTOTAL:	**$ 1,699,200**
				CONTINGENCY 25%	$ 424,800
				SUBTOTAL:	**$ 2,124,000**
				ENG/SURVEY 15%	$ 318,600
				SUBTOTAL:	**$ 2,442,600**
				Estimated Project Total:	**$ 2,442,600**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 15 **Phase:** 20-Year

Project Name: New 4.0 MGD East Regional Lift Station and 14-inch Force Main

Project Description:

This project includes the construction of a 4.0 MGD regional lift station for the East Service Area and a 14-inch force main. This planning level cost does not include land acquisition.

Project Drivers:

This project is sized to convey the projected future wastewater flows generated in the East Service Area to the Central WWTP through 2041.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	East Regional LS Wet Well	1	LS	$ 860,200	$ 860,200
2	East Regional LS Pumps	1	LS	$ 462,000	$ 462,000
3	East Regional LS Electrical	1	LS	$ 462,000	$ 462,000
4	East Regional LS Generator	1	LS	$ 264,000	$ 264,000
5	East Regional LS Piping and Valves	1	LS	$ 154,000	$ 154,000
6	14" Force Main < 8 feet deep	15,500	LF	$ 210	$ 3,255,000
7	Pavement Repair	1,600	LF	$ 90	$ 144,000
8	24" Boring and Casing	600	LF	$ 528	$ 316,800
				SUBTOTAL:	**$ 5,918,000**
		CONTINGENCY		25%	$ 1,479,500
				SUBTOTAL:	**$ 7,397,500**
		ENG/SURVEY		20%	$ 1,479,500
				SUBTOTAL:	**$ 8,877,000**
				Estimated Project Total:	**$ 8,877,000**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 16 **Phase:** 20-Year

Project Name: 12-inch Gravity Main along Highway 6

Project Description:

This project includes the construction of a 12-inch gravity main along Highway 6.

Project Drivers:

This project is sized to convey projected future wastewater flows in the East Service Area along Highway 6 to the new East Regional Lift Station.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" Pipe > 16 feet deep	5,500	LF	$ 192	$ 1,056,000
2	48" Diameter Manhole (16' - 24')	12	EA	$ 18,000	$ 216,000
3	Pavement Repair	700	LF	$ 90	$ 63,000
4	24" Boring and Casing	200	LF	$ 528	$ 105,600
				SUBTOTAL:	**$ 1,440,600**
				CONTINGENCY 25%	$ 360,200
				SUBTOTAL:	**$ 1,800,800**
				ENG/SURVEY 15%	$ 270,200
				SUBTOTAL:	**$ 2,071,000**
				Estimated Project Total:	**$ 2,071,000**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 17 **Phase:** 20-Year

Project Name: West Regional Wastewater Treatment Plant Expansion to 4.0 MGD

Project Description:

This project includes the construction of 2.0 MGD additional treatment capacity at the West Regional WWTP. This project also includes the construction of a 12.0 MGD West Regional WWTP Influent Lift Station and a 24-inch force main.

Project Drivers:

This construction of the West Regional WWTP and Influent Lift Station is sized to convey and treat the projected wastewater flows from the West Service Area through 2041. This expansion will convey and treat wastewater flows from the Pomona and Southfork Developments and additional City customer connections in the West Service Area via the West Service Area Treatment Consolidation Projects (Project 18 and Project 19).

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	4.0 MGD West WWTP (2.0 MGD Expansion) and 12.0 MGD Influent WWTP Lift Station	1	LS	$ 25,416,000	$ 25,416,000
2	24" Force Main < 8 feet deep	3,900	LF	$ 360	$ 1,404,000
3	36" Boring and Casing	300	LF	$ 792	$ 237,600
4	Pavement Repair	500	LF	$ 90	$ 45,000
				SUBTOTAL:	**$ 27,102,600**
				CONTINGENCY 25%	$ 6,775,700
				SUBTOTAL:	**$ 33,878,300**
				ENG/SURVEY 20%	$ 6,775,700
				SUBTOTAL:	**$ 40,654,000**
				Estimated Project Total:	**$ 40,654,000**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 18 **Phase:** 20-Year

Project Name: West Service Area Wastewater Treatment Plant Consolidation and Gravity Main (Phase 1)

Project Description:

This project includes the decommissioning of the Pomona WWTP, the construction of a new 6.0 MGD Pomona Lift Station (firm pumping capacity) and 18-inch force main, and the construction of a 36/42-inch trunk line to the West Regional WWTP Influent Lift Station.

Project Drivers:

This project will convey the wastewater flows from the Pomona and Southfork Developments to the West Service Area Regional WWTP Influent Lift Station and WWTP. The existing Pomona WWTP does not have the long-term service life that the West Regional WWTP will have. Long-term, it will be more efficient for the City to operate fewer WWTPs. This project will decommission the Pomona WWTP in accordance with TCEQ regulations. Note that this project is also sized to re-pump the peak wastewater flows from the Southfork Development (Project 19).

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	36" Pipe 8- 16 feet deep	5,700	LF	$ 540	$ 3,078,000
2	36" Pipe > 16 feet deep	4,100	LF	$ 576	$ 2,361,600
3	42" Pipe > 16 feet deep	1,500	LF	$ 672	$ 1,008,000
4	72" Diameter Manhole (8' -16')	7	EA	$ 20,000	$ 140,000
5	72" Diameter Manhole (16' - 24')	7	EA	$ 25,000	$ 175,000
6	Decommission WWTP	1	EA	$ 300,000	$ 300,000
7	18" Force Main < 8 feet deep	7,500	LF	$ 270	$ 2,025,000
8	Pomona LS Wet Well	1	LS	$ 896,500	$ 896,500
9	Pomona LS Pumps	1	LS	$ 693,000	$ 693,000
10	Pomona LS Electrical	1	LS	$ 638,000	$ 638,000
11	Pomona LS Generator	1	LS	$ 396,000	$ 396,000
12	Pomona LS Piping and Valves	1	LS	$ 174,900	$ 174,900
13	Pavement Repair	1,000	LF	$ 90	$ 90,000
14	36" Boring and Casing	200	LF	$ 792	$ 158,400
				SUBTOTAL:	**$ 12,134,400**
			CONTINGENCY	25%	$ 3,033,600
				SUBTOTAL:	**$ 15,168,000**
			ENG/SURVEY	20%	$ 3,033,600
				SUBTOTAL:	**$ 18,201,600**
				Estimated Project Total:	**$ 18,201,600**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 19 **Phase:** 20-Year

Project Name: West Service Area Wastewater Treatment Consolidation (Phase 2)

Project Description:

This project includes the decommissioning of the Southfork WWTP, and the construction of a new Southfork 1.8 MGD Lift Station (firm pumping capacity) and 10-inch force main.

Project Drivers:

This project will pump the wastewater flows from the Southfork WWTP to the new Pomona Lift Station (Project 18), whereby the wastewater flow will be conveyed to the West Service Area Regional WWTP Influent Lift Station. The existing Southfork WWTP does not have the long-term service life that the West WWTP will have. Long-term, it will be more efficient for the City to operate fewer WWTPs. This project will decommission the Southfork WWTP in accordance with TCEQ regulations.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Decommission WWTP	1	EA	$ 300,000	$ 300,000
2	Southfork LS Wet Well	1	LS	$ 487,300	$ 487,300
3	Southfork LS Pumps	1	LS	$ 207,900	$ 207,900
4	Southfork LS Electrical	1	LS	$ 213,400	$ 213,400
5	Southfork LS Generator	1	LS	$ 118,800	$ 118,800
6	Southfork LS Piping and Valves	1	LS	$ 74,800	$ 74,800
7	10" Force Main < 8 feet deep	6,100	LF	$ 150	$ 915,000
8	Pavement Repair	610	LF	$ 90	$ 54,900
9	24" Boring and Casing	500	LF	$ 528	$ 264,000
				SUBTOTAL:	**$ 2,636,100**
				CONTINGENCY 25%	$ 659,100
				SUBTOTAL:	**$ 3,295,200**
				ENG/SURVEY 20%	$ 659,100
				SUBTOTAL:	**$ 3,954,300**
				Estimated Project Total:	**$ 3,954,300**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 20 **Phase:** 20-Year

Project Name: 21/24-inch Gravity Main along Mustang Bayou

Project Description:

This project includes the construction of new 21-inch and 24-inch trunk line along Mustang Bayou.

Project Drivers:

This project is sized to convey the projected future (2041) peak wastewater flows from the East Service Area north of Highway 6 to the East Regional Lift Station.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	21" Pipe > 16 feet deep	4,800	LF	$ 336	$ 1,612,800
2	24" Pipe > 16 feet deep	5,500	LF	$ 384	$ 2,112,000
3	60" Diameter Manhole (16' - 24')	7	EA	$ 22,000	$ 154,000
4	72" Diameter Manhole (16' - 24')	8	EA	$ 25,000	$ 200,000
5	Pavement Repair	1,030	LF	$ 90	$ 92,700
6	36" Boring and Casing	200	LF	$ 792	$ 158,400
				SUBTOTAL:	**$ 4,329,900**
			CONTINGENCY	25%	$ 1,082,500
				SUBTOTAL:	**$ 5,412,400**
			ENG/SURVEY	15%	$ 811,900
				SUBTOTAL:	**$ 6,224,300**
				Estimated Project Total:	**$ 6,224,300**

City of Manvel

Wastewater CIP - Opinion of Probable Construction Cost* **December 23, 2021**

Planning Level Cost in 2021 Dollars

CIP Project Number: 21 **Phase:** 20-Year

Project Name: New 1.0 MGD Lift Station, 8-inch Force Main and 15-inch Gravity Line

Project Description:

This project includes the construction of a 15-inch gravity main, a new 1.0 MGD lift station and an 8-inch force main along Mustang Bayou.

Project Drivers:

This project is sized to convey the projected future (2041) peak wastewater projected peak wastewater flows from the East Service Area north of Highway 6 to the East Regional Lift Station.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	15" Pipe > 16 feet deep	5,800	LF	$ 240	$ 1,392,000
2	60" Diameter Manhole (16' - 24')	13	EA	$ 22,000	$ 286,000
3	8" Force Main < 8 feet deep	500	LF	$ 120	$ 60,000
4	New East 1 MGD LS Wet Well	1	LS	$ 441,100	$ 441,100
5	New East 1 MGD LS Pumps	1	LS	$ 115,500	$ 115,500
6	New East 1 MGD LS Electrical	1	LS	$ 143,000	$ 143,000
7	New East 1 MGD LS Generator	1	LS	$ 66,000	$ 66,000
8	New East 1 MGD LS Piping and Valves	1	LS	$ 66,000	$ 66,000
9	Pavement Repair	630	LF	$ 90	$ 56,700
10	36" Boring and Casing	200	LF	$ 792	$ 158,400
				SUBTOTAL:	**$ 2,784,700**
			CONTINGENCY	25%	$ 696,200
				SUBTOTAL:	**$ 3,480,900**
			ENG/SURVEY	20%	$ 696,200
				SUBTOTAL:	**$ 4,177,100**
				Estimated Project Total:	**$ 4,177,100**

APPENDIX B
Lift Station Inventory

City of Manvel

Master Wastewater Plan Update

Lift Station Inventory

General Information			Wet Well				Piping			Pumps						Control Levels (ft MSL)			
Lift Station Name (No.)	Year Built	As Built Plans	Diameter (ft)	Depth (ft)	Bottom Elev. (ft MSL)	Ground Elev. (ft MSL)	Foce Main Diameter (in)	Influent Diameter (in)	Inf. Flowline(s) (ft MSL)	No. Pumps	Manuf./Type	Model/Serial No.	Firm Capacity (gpm)	Horse Power	TDH (ft)	1st Pump ON	2nd Pump ON	All Pumps ON	All Pumps OFF
Corporate Drive (No. 1) ***WWTP Influent Lift Station***	2004	Yes	8	19.6	32.72	52.3	8	24	40.3	3	Submersible		950	10	67	40.3	40.8	41.3	34.72
McCoy Road (No. 3)	-	None Available	3	10	-	-	-	-	-	2	-	-	317	2	45	-	-		-
Large Avenue[(a)] (No. 4)	2017	Yes	8	24.2	29.92	51.11	6	24	34.03	2	Myers Pentair Submersible	4RH/4RHX	300	15	49	33.67	34.17	34.17	31.92
Rogers Road (No. 5)	-	None Available	10	23	-	-	-	-	-	2	-	-	433	10	79	-	-		-
Lewis Lane (No. 6)	-	None Available	10	24	-	-	-	-	-	2	-	-	200	5	30.5	-	-		-
Lakeland[(b)] (No. 7) ***In Lakeland Subdivision***	2010	Yes	10	30.3	26.2	55.8	10	15	34.0	3	Flygt Submersible	3153-63-465-00-3050	550[(c)] 716[(d)]	7.5	25.6[(2)]	33.8[(2)(3)]	34.8[(3)]	36.8[(2)(3)]	28.7[(2)(3)]
Bluewater[(e)] (No. 8)	2017	Yes	10	27.9	27.58	54	6	8	33.8	2	Flygt Submersible	CP 3102 MT 3 ~ 432	287	5	38	32.85	33.83	33.83	31.58
Dell Bello Lakes[(f)] (No. 9)	2019	Yes	10	29	28.5	56	8	10	36.0	2	Flygt Submersible	NP 3153 HT 2 ~ 464	525	15	61	35	36	36	31.5

Notes:

(a) Information based on bid plans for lift station expansion (Plans dated January 9, 2017)

(b) Information based on plans dated January 28, 2010

(c) Initial (existing) condition - duplex pump setup

(d) Final (future) condition - triplex pump setup

(e) Information based on plans for lift station construction (Plans dated February 2, 2017)

(f) Information based on plans for lift station construction (Plans dated March 7, 2019)

APPENDIX C
Wastewater TPDES Permits

TPDES PERMIT NO.
WQ0013872001
[For TCEQ office use only - EPA I.D. No. TX0118397]

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. Box 13087
Austin, Texas 78711-3087

This is a renewal that replaces TPDES Permit No. WQ0013872001 issued on October 18, 2013.

PERMIT TO DISCHARGE WASTES
under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

City of Manvel

whose mailing address is

20025 Morris Avenue
Manvel, Texas 77578

is authorized to treat and discharge wastes from the City of Manvel Wastewater Treatment Facility, SIC Code 4952

located at 7315 Corporate Drive, Manvel, in Brazoria County, Texas 77578

to Brazoria County Flood Control Ditch No. 12; thence to Chocolate Bayou Above Tidal in Segment No. 1108 of the San Jacinto River Basin

only according to effluent limitations, monitoring requirements, and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight, **five years from the date of issuance**.

ISSUED DATE: December 20, 2018

For the Commission

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 0.50 million gallons per day (MGD), nor shall the average discharge during any two-hour period (2-hour peak) exceed 1,389 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg mg/l (lbs/day)	7-day Avg mg/l	Daily Max mg/l	Single Grab mg/l	Report Daily Avg. & Daily Max. Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	10 (42)	15	25	35	One/week	Composite
Total Suspended Solids	15 (63)	25	40	60	One/week	Composite
Ammonia Nitrogen	3 (13)	6	10	15	One/week	Composite
E. coli, colony-forming units or most probable number per 100 ml	126	N/A	399	N/A	One/month	Grab

2. The effluent shall contain a chlorine residual of at least 1.0 mg/l and shall not exceed a chlorine residual of 4.0 mg/l after a detention time of at least 20 minutes (based on peak flow), and shall be monitored daily by grab sample at each chlorine contact chamber. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored twice per month by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location(s): Following the final treatment unit.

6. The effluent shall contain a minimum dissolved oxygen of 5.0 mg/l and shall be monitored once per week by grab sample.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC § 305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§ 5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§ 361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in TWC § 26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

   a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder and limited to major domestic wastewater discharge facilities with one million gallons per day or greater permitted flow.

   b. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.

   c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.

   d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.

   e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.

   f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calendar month.

2. Concentration Measurements

   a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.

      i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.

ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.

b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.

c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.

d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the sampling day.

The daily discharge determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily discharge determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

e. Bacteria concentration (*E. coli* or Enterococci) - Colony Forming Units (CFU) or Most Probable Number (MPN) of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or, computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements made in a calendar month. For any measurement of bacteria equaling zero, a substituted value of one shall be made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.

f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD x Concentration, mg/l x 8.34).

g. Daily maximum loading (lbs/day) - the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

3. Sample Type

a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (b).

b. Grab sample - an individual sample collected in less than 15 minutes.

4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.

5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes.

6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 - 319.12. Unless otherwise specified, effluent monitoring data shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge which is described by this permit whether or not a discharge is made for that month. Monitoring results must be submitted online using the NetDMR reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. Monitoring results must be signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act (CWA); TWC §§ 26, 27, and 28; and THSC § 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§ 319.11 - 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.

b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC § 25, Environmental Testing Laboratory Accreditation and Certification.

3. Records of Results

a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR § 264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.

c. Records of monitoring activities shall include the following:

i. date, time and place of sample or measurement;

ii. identity of individual who collected the sample or made the measurement.

iii. date and time of analysis;

iv. identity of the individual and laboratory who performed the analysis;

v. the technique or method of analysis; and

vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later

than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

7. Noncompliance Notification

   a. In accordance with 30 TAC § 305.125(9) any noncompliance which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Except as allowed by 30 TAC § 305.132, report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. For Publicly Owned Treatment Works (POTWs), effective September 1, 2020, the permittee must submit the written report for unauthorized discharges and unanticipated bypasses that exceed any effluent limit in the permit using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

   b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:

      i. Unauthorized discharges as defined in Permit Condition 2(g).

      ii. Any unanticipated bypass that exceeds any effluent limitation in the permit.

      iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

   c. In addition to the above, any effluent violation which deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.

   d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.

8. In accordance with the procedures described in 30 TAC §§ 35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.

9. Changes in Discharges of Toxic Substances

   All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   i. One hundred micrograms per liter (100 µg/L);

   ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

   iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or

   iv. The level established by the TCEQ.

b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   i. Five hundred micrograms per liter (500 µg/L);

   ii. One milligram per liter (1 mg/L) for antimony;

   iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or

   iv. The level established by the TCEQ.

10. Signatories to Reports

    All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).

11. All POTWs must provide adequate notice to the Executive Director of the following:

    a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to CWA § 301 or § 306 if it were directly discharging those pollutants;

    b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and

    c. For the purpose of this paragraph, adequate notice shall include information on:

       i. The quality and quantity of effluent introduced into the POTW; and

       ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

   a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

   b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:

      i. Violation of any terms or conditions of this permit;

      ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

      iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

   c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

   a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.

   b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility.

   c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

   d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation that has a reasonable likelihood of adversely affecting human health or the environment.

   e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.

f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§ 305.62 and 305.66 and TWC§ 7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.

h. In accordance with 30 TAC § 305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility which does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.

i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under TWC §§ 7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal CWA §§ 301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA § 402, or any requirement imposed in a pretreatment program approved under the CWA §§ 402 (a)(3) or 402 (b)(8).

3. Inspections and Entry

a. Inspection and entry shall be allowed as prescribed in the TWC Chapters 26, 27, and 28, and THSC § 361.

b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in TWC § 7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment and/or Renewal

   a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:

      i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC § 305.534 (relating to New Sources and New Dischargers); or

      ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9;

      iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

   b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.

   c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.

   d. Prior to accepting or generating wastes which are not described in the permit application or which would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.

   e. In accordance with the TWC § 26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.

   f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA § 307(a) for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be

modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA § 307(a) for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

   a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.

   b. A permit may be transferred only according to the provisions of 30 TAC § 305.64 (relating to Transfer of Permits) and 30 TAC § 50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

   This permit does not authorize any activity of hazardous waste storage, processing, or disposal that requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Relationship to Water Rights

   Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to TWC Chapter 11.

8. Property Rights

   A permit does not convey any property rights of any sort, or any exclusive privilege.

9. Permit Enforceability

   The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. Relationship to Permit Application

    The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

11. Notice of Bankruptcy

    a. Each permittee shall notify the Executive Director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 Bankruptcy) of the United States Code (11 USC) by or against:

       i. the permittee;

ii. an entity (as that term is defined in 11 USC, § 101(14)) controlling the permittee or listing the permit or permittee as property of the estate; or

iii. an affiliate (as that term is defined in 11 USC, § 101(2)) of the permittee.

b. This notification must indicate:

i. the name of the permittee and the permit number(s);

ii. the bankruptcy court in which the petition for bankruptcy was filed; and

iii. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.

2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§ 319.21 - 319.29 concerning the discharge of certain hazardous metals.

3. Domestic wastewater treatment facilities shall comply with the following provisions:

a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.

b. The permittee shall submit a closure plan for review and approval to the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment and/or other treatment unit regulated by this permit.

4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, and/or retention of inadequately treated wastewater.

5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.

6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC § 7.302(b)(6).

7. Documentation

   For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC §§ 1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words confidential business information on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.

   a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility which reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

      If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 219) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.

10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.

11. Facilities that generate industrial solid waste as defined in 30 TAC § 335.1 shall comply with these provisions:

a. Any solid waste, as defined in 30 TAC § 335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.

c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC § 335.8(b)(1), to the Environmental Cleanup Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Registration, Review, and Reporting Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC § 335.5.

e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC § 335 and must include the following, as it pertains to wastewater treatment and discharge:

   i. Volume of waste and date(s) generated from treatment process;
   ii. Volume of waste disposed of on-site or shipped off-site;
   iii. Date(s) of disposal;
   iv. Identity of hauler or transporter;
   v. Location of disposal site; and
   vi. Method of final disposal.

   The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC § 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC § 361.

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SLUDGE PROVISIONS

The permittee is authorized to dispose of sludge only at a Texas Commission on Environmental Quality (TCEQ) authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge. **The disposal of sludge by land application on property owned, leased or under the direct control of the permittee is a violation of the permit unless the site is authorized with the TCEQ. This provision does not authorize Distribution and Marketing of Class A or Class AB Sewage Sludge. This provision does not authorize the permittee to land apply sludge on property owned, leased or under the direct control of the permittee.**

SECTION I. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE LAND APPLICATION

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC § 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. In all cases, if the person (permit holder) who prepares the sewage sludge supplies the sewage sludge to another person for land application use or to the owner or lease holder of the land, the permit holder shall provide necessary information to the parties who receive the sludge to assure compliance with these regulations.

3. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

B. Testing Requirements

1. Sewage sludge shall be tested once during the term of this permit in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I [Toxicity Characteristic Leaching Procedure (TCLP)] or other method that receives the prior approval of the TCEQ for the contaminants listed in 40 CFR Part 261.24, Table 1. Sewage sludge failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal. Following failure of any TCLP test, the management or disposal of sewage sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division and the Regional Director (MC Region 12) within seven (7) days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Registration, Review, and Reporting Division (MC 129), Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 12) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

2. Sewage sludge shall not be applied to the land if the concentration of the pollutants exceeds the pollutant concentration criteria in Table 1. The frequency of testing for pollutants in Table 1 is found in Section I.C.

TABLE 1

Pollutant	Ceiling Concentration (Milligrams per kilogram)*
Arsenic	75
Cadmium	85
Chromium	3000
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
PCBs	49
Selenium	100
Zinc	7500

* Dry weight basis

3. Pathogen Control

All sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site must be treated by one of the following methods to ensure that the sludge meets either the Class A, Class AB or Class B pathogen requirements.

a. For sewage sludge to be classified as Class A with respect to pathogens, the density of fecal coliform in the sewage sludge be less than 1,000 most probable number (MPN) per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met.

Alternative 1 - The temperature of the sewage sludge that is used or disposed shall be maintained at or above a specific value for a period of time. See 30 TAC § 312.82(a)(2)(A) for specific information.

Alternative 5 (PFRP) - Sewage sludge that is used or disposed of must be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in 40 CFR Part 503, Appendix B. PFRP include composting, heat drying, heat treatment, and thermophilic aerobic digestion.

Alternative 6 (PFRP Equivalent) - Sewage sludge that is used or disposed of must be treated in a process that has been approved by the U. S. Environmental Protection Agency as being equivalent to those in Alternative 5.

b. For sewage sludge to be classified as Class AB with respect to pathogens, the density of fecal coliform in the sewage sludge be less than 1,000 MPN per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met.

Alternative 2 - The pH of the sewage sludge that is used or disposed shall be raised to above 12 std. units and shall remain above 12 std. units for 72 hours.

The temperature of the sewage sludge shall be above 52° Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12 std. units.

At the end of the 72-hour period during which the pH of the sewage sludge is above 12 std. units, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50%.

Alternative 3 - The sewage sludge shall be analyzed for enteric viruses prior to pathogen treatment. The limit for enteric viruses is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(i-iii) for specific information. The sewage sludge shall be analyzed for viable helminth ova prior to pathogen treatment. The limit for viable helminth ova is less than one per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(iv-vi) for specific information.

Alternative 4 - The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed.

c. Sewage sludge that meets the requirements of Class AB sewage sludge may be classified a Class A sewage sludge if a variance request is submitted in writing that is supported by substantial documentation demonstrating equivalent methods for reducing odors and written approval is granted by the executive director. The executive director may deny the variance request or revoke that approved variance if it is determined that the variance may potentially endanger human health or the environment or create nuisance odor conditions.

d. Three alternatives are available to demonstrate compliance with Class B criteria for sewage sludge.

Alternative 1

i. A minimum of seven random samples of the sewage sludge shall be collected within 48 hours of the time the sewage sludge is used or disposed of during each monitoring episode for the sewage sludge.

ii. The geometric mean of the density of fecal coliform in the samples collected shall be less than either 2,000,000 MPN per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

Alternative 2 - Sewage sludge that is used or disposed of shall be treated in one of the Processes to Significantly Reduce Pathogens (PSRP) described in 40 CFR Part 503, Appendix B, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

ii. An independent Texas Licensed Professional Engineer must make a certification to the generator of a sewage sludge that the wastewater treatment facility generating the sewage sludge is designed to achieve one of the PSRP at the permitted design loading of the facility. The certification need only be repeated if the design loading of the facility is increased. The certification shall include a statement indicating the design meets all the applicable standards specified in Appendix B of 40 CFR Part 503;

iii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iv. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review; and

v. If the sewage sludge is generated from a mixture of sources, resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the PSRP, and shall meet the certification, operation, and record keeping requirements of this paragraph.

Alternative 3 - Sewage sludge shall be treated in an equivalent process that has been approved by the U.S. Environmental Protection Agency, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

ii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iii. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review;

iv. The Executive Director will accept from the U.S. Environmental Protection Agency a finding of equivalency to the defined PSRP; and

v. If the sewage sludge is generated from a mixture of sources resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the Processes to Significantly Reduce Pathogens, and shall meet the certification, operation, and record keeping requirements of this paragraph.

In addition, the following site restrictions must be met if Class B sludge is land applied:

i. Food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of sewage sludge.

ii. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for 4 months or longer prior to incorporation into the soil.

iii. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than 4 months prior to incorporation into the soil.

iv. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge.

v. Animals shall not be allowed to graze on the land for 30 days after application of sewage sludge.

vi. Turf grown on land where sewage sludge is applied shall not be harvested for 1 year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn.

vii. Public access to land with a high potential for public exposure shall be restricted for 1 year after application of sewage sludge.
viii. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.

ix. Land application of sludge shall be in accordance with the buffer zone requirements found in 30 TAC § 312.44.

4. Vector Attraction Reduction Requirements

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall be treated by one of the following Alternatives 1 through 10 for vector attraction reduction.

Alternative 1 - The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38%.

Alternative 2 - If Alternative 1 cannot be met for an anaerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30° and 37° Celsius. Volatile solids must be reduced by less than 17% to demonstrate compliance.

Alternative 3 - If Alternative 1 cannot be met for an aerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge with percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20° Celsius. Volatile solids must be reduced by less than 15% to demonstrate compliance.

Alternative 4 - The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20° Celsius.

Alternative 5 - Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40° Celsius and the average temperature of the sewage sludge shall be higher than 45° Celsius.

Alternative 6 - The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali shall remain at 12 or higher for two hours and then remain at a pH of 11.5 or higher for an additional 22 hours at the time the sewage sludge is prepared for sale or given away in a bag or other container.

Alternative 7 - The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75% based on the moisture content and total solids prior to mixing with other materials. Unstabilized solids are

defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 8 - The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90% based on the moisture content and total solids prior to mixing with other materials at the time the sludge is used. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 9 -

i. Sewage sludge shall be injected below the surface of the land.

ii. No significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected.

iii. When sewage sludge that is injected below the surface of the land is Class A or Class AB with respect to pathogens, the sewage sludge shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process.

Alternative 10-

i. Sewage sludge applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land.

ii. When sewage sludge that is incorporated into the soil is Class A or Class AB with respect to pathogens, the sewage sludge shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.

C. Monitoring Requirements

Toxicity Characteristic Leaching Procedure (TCLP) Test	- once during the term of this permit
PCBs	- once during the term of this permit

All metal constituents and fecal coliform or *Salmonella* sp. bacteria shall be monitored at the appropriate frequency shown below, pursuant to 30 TAC § 312.46(a)(1):

Amount of sewage sludge (*) metric tons per 365-day period	Monitoring Frequency
0 to less than 290	Once/Year
290 to less than 1,500	Once/Quarter
1,500 to less than 15,000	Once/Two Months
15,000 or greater	Once/Month

(*) *The amount of bulk sewage sludge applied to the land (dry wt. basis).*

Representative samples of sewage sludge shall be collected and analyzed in accordance with the methods referenced in 30 TAC § 312.7

Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella sp.*, and other regulated parameters.

Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

SECTION II. REQUIREMENTS SPECIFIC TO BULK SEWAGE SLUDGE FOR APPLICATION TO THE LAND MEETING CLASS A, CLASS AB or B PATHOGEN REDUCTION AND THE CUMULATIVE LOADING RATES IN TABLE 2, OR CLASS B PATHOGEN REDUCTION AND THE POLLUTANT CONCENTRATIONS IN TABLE 3

For those permittees meeting Class A, Class AB or B pathogen reduction requirements and that meet the cumulative loading rates in Table 2 below, or the Class B pathogen reduction requirements and contain concentrations of pollutants below listed in Table 3, the following conditions apply:

A. Pollutant Limits

Table 2

Pollutant	Cumulative Pollutant Loading Rate (pounds per acre)*
Arsenic	36
Cadmium	35
Chromium	2677
Copper	1339
Lead	268
Mercury	15
Molybdenum	Report Only
Nickel	375
Selenium	89
Zinc	2500

Table 3

Pollutant	Monthly Average Concentration (milligrams per kilogram)*
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	Report Only
Nickel	420
Selenium	36
Zinc	2800

*Dry weight basis

B. Pathogen Control

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, a reclamation site, shall be treated by either Class A, Class AB or Class B pathogen reduction requirements as defined above in Section I.B.3.

C. Management Practices

1. Bulk sewage sludge shall not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other waters in the State.

2. Bulk sewage sludge not meeting Class A requirements shall be land applied in a manner which complies with Applicability in accordance with 30 TAC §312.41 and the Management Requirements in accordance with 30 TAC § 312.44.

3. Bulk sewage sludge shall be applied at or below the agronomic rate of the cover crop.

4. An information sheet shall be provided to the person who receives bulk sewage sludge sold or given away. The information sheet shall contain the following information:

   a. The name and address of the person who prepared the sewage sludge that is sold or given away in a bag or other container for application to the land.

   b. A statement that application of the sewage sludge to the land is prohibited except in accordance with the instruction on the label or information sheet.

   c. The annual whole sludge application rate for the sewage sludge application rate for the sewage sludge that does not cause any of the cumulative pollutant loading rates in Table 2 above to be exceeded, unless the pollutant concentrations in Table 3 found in Section II above are met.

D. Notification Requirements

1. If bulk sewage sludge is applied to land in a State other than Texas, written notice shall be provided prior to the initial land application to the permitting authority for the State in which the bulk sewage sludge is proposed to be applied. The notice shall include:

   a. The location, by street address, and specific latitude and longitude, of each land application site.

   b. The approximate time period bulk sewage sludge will be applied to the site.

   c. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) for the person who will apply the bulk sewage sludge.

2. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

E. Record keeping Requirements

The sludge documents will be retained at the facility site and/or shall be readily available for review by a TCEQ representative. The person who prepares bulk sewage sludge or a sewage sludge material shall develop the following information and shall retain the information at

the facility site and/or shall be readily available for review by a TCEQ representative for a period of five years. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply.

1. The concentration (mg/kg) in the sludge of each pollutant listed in Table 3 above and the applicable pollutant concentration criteria (mg/kg), or the applicable cumulative pollutant loading rate and the applicable cumulative pollutant loading rate limit (lbs/ac) listed in Table 2 above.

2. A description of how the pathogen reduction requirements are met (including site restrictions for Class AB and Class B sludge, if applicable).

3. A description of how the vector attraction reduction requirements are met.

4. A description of how the management practices listed above in Section II.C are being met.

5. The following certification statement:

   "I certify, under penalty of law, that the applicable pathogen requirements in 30 TAC § 312.82(a) or (b) and the vector attraction reduction requirements in 30 TAC § 312.83(b) have been met for each site on which bulk sewage sludge is applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices have been met. I am aware that there are significant penalties for false certification including fine and imprisonment."

6. The recommended agronomic loading rate from the references listed in Section II.C.3. above, as well as the actual agronomic loading rate shall be retained. The person who applies bulk sewage sludge or a sewage sludge material shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative indefinitely. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply:

   a. A certification statement that all applicable requirements (specifically listed) have been met, and that the permittee understands that there are significant penalties for false certification including fine and imprisonment. See 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii), as applicable, and to the permittee's specific sludge treatment activities.

   b. The location, by street address, and specific latitude and longitude, of each site on which sludge is applied.

   c. The number of acres in each site on which bulk sludge is applied.

   d. The date and time sludge is applied to each site.

e. The cumulative amount of each pollutant in pounds/acre listed in Table 2 applied to each site.

f. The total amount of sludge applied to each site in dry tons.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

F. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year the following information. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

3. Results of tests performed for pollutants found in either Table 2 or 3 as appropriate for the permittee's land application practices.

4. The frequency of monitoring listed in Section I.C. that applies to the permittee.

5. Toxicity Characteristic Leaching Procedure (TCLP) results.

6. PCB concentration in sludge in mg/kg.

7. Identity of hauler(s) and TCEQ transporter number.

8. Date(s) of transport.

9. Texas Commission on Environmental Quality registration number, if applicable.

10. Amount of sludge disposal dry weight (lbs/acre) at each disposal site.

11. The concentration (mg/kg) in the sludge of each pollutant listed in Table 1 (defined as a monthly average) as well as the applicable pollutant concentration criteria (mg/kg) listed in Table 3 above, or the applicable pollutant loading rate limit (lbs/acre) listed in Table 2 above if it exceeds 90% of the limit.

12. Level of pathogen reduction achieved (Class A, Class AB or Class B).

13. Alternative used as listed in Section I.B.3.(a. or b.). Alternatives describe how the pathogen reduction requirements are met. If Class B sludge, include information on how site restrictions were met.

14. Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella sp.*, and other regulated parameters.

15. Vector attraction reduction alternative used as listed in Section I.B.4.

16. Amount of sludge transported in dry tons/year.

17. The certification statement listed in either 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii) as applicable to the permittee's sludge treatment activities, shall be attached to the annual reporting form.

18. When the amount of any pollutant applied to the land exceeds 90% of the cumulative pollutant loading rate for that pollutant, as described in Table 2, the permittee shall report the following information as an attachment to the annual reporting form.

    a. The location, by street address, and specific latitude and longitude.

    b. The number of acres in each site on which bulk sewage sludge is applied.

    c. The date and time bulk sewage sludge is applied to each site.

    d. The cumulative amount of each pollutant (i.e., pounds/acre) listed in Table 2 in the bulk sewage sludge applied to each site.

    e. The amount of sewage sludge (i.e., dry tons) applied to each site.

    The above records shall be maintained on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION III. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE DISPOSED IN A MUNICIPAL SOLID WASTE LANDFILL

A. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC § 330 and all other applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present. The permittee shall ensure that the sewage sludge meets the requirements in 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

B. If the permittee generates sewage sludge and supplies that sewage sludge to the owner or operator of a municipal solid waste landfill (MSWLF) for disposal, the permittee shall provide to the owner or operator of the MSWLF appropriate information needed to be in compliance with the provisions of this permit.

C. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

D. Sewage sludge shall be tested once during the term of this permit in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I (Toxicity Characteristic Leaching Procedure) or other method, which receives the prior approval of the TCEQ for contaminants listed in Table 1 of 40 CFR § 261.24. Sewage sludge failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal.

   Following failure of any TCLP test, the management or disposal of sewage sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division and the Regional Director (MC Region 12) of the appropriate TCEQ field office within 7 days after failing the TCLP Test.

   The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Registration, Review, and Reporting Division (MC 129), Texas Commission on Environmental Quality, P. O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 12) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30 of each year.

E. Sewage sludge shall be tested as needed, in accordance with the requirements of 30 TAC Chapter 330.

F. Record keeping Requirements

   The permittee shall develop the following information and shall retain the information for five years.

1. The description (including procedures followed and the results) of all liquid Paint Filter Tests performed.

2. The description (including procedures followed and results) of all TCLP tests performed.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

G. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year the following information. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Toxicity Characteristic Leaching Procedure (TCLP) results.

3. Annual sludge production in dry tons/year.

4. Amount of sludge disposed in a municipal solid waste landfill in dry tons/year.

5. Amount of sludge transported interstate in dry tons/year.

6. A certification that the sewage sludge meets the requirements of 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

7. Identity of hauler(s) and transporter registration number.

8. Owner of disposal site(s).

9. Location of disposal site(s).

10. Date(s) of disposal.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION IV. REQUIREMENTS APPLYING TO SLUDGE TRANSPORTED TO ANOTHER FACILITY FOR FURTHER PROCESSING

These provisions apply to sludge that is transported to another wastewater treatment facility or facility that further processes sludge. These provisions are intended to allow transport of sludge to facilities that have been authorized to accept sludge. These provisions do not limit the ability of the receiving facility to determine whether to accept the sludge, nor do they limit the ability of the receiving facility to request additional testing or documentation.

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC Chapter 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. Sludge may only be transported using a registered transporter or using an approved pipeline.

B. Record Keeping Requirements

1. For sludge transported by an approved pipeline, the permittee must maintain records of the following:

   a. the amount of sludge transported;

   b. the date of transport;

   c. the name and TCEQ permit number of the receiving facility or facilities;

   d. the location of the receiving facility or facilities;

   e. the name and TCEQ permit number of the facility that generated the waste; and

   f. copy of the written agreement between the permittee and the receiving facility to accept sludge.

2. For sludge transported by a registered transporter, the permittee must maintain records of the completed trip tickets in accordance with 30 TAC § 312.145(a)(1)-(7) and amount of sludge transported.

3. The above records shall be maintained on-site on a monthly basis and shall be made available to the TCEQ upon request. These records shall be retained for at least five years.

C. Reporting Requirements

The permittee shall report the following information annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. the annual sludge production;

3. the amount of sludge transported;

4. the owner of each receiving facility;

5. the location of each receiving facility; and

6. the date(s) of disposal at each receiving facility.

TCEQ Revision 01/2016

OTHER REQUIREMENTS

1. The permittee shall employ or contract with one or more licensed wastewater treatment facility operators or wastewater system operations companies holding a valid license or registration according to the requirements of 30 TAC Chapter 30, Occupational Licenses and Registrations, and in particular 30 TAC Chapter 30, Subchapter J, Wastewater Operators and Operations Companies.

   This Category C facility must be operated by a chief operator or an operator holding a Category C license or higher. The facility must be operated a minimum of five days per week by the licensed chief operator or an operator holding the required level of license or higher. The licensed chief operator or operator holding the required level of license or higher must be available by telephone or pager seven days per week. Where shift operation of the wastewater treatment facility is necessary, each shift which does not have the on-site supervision of the licensed chief operator must be supervised by an operator in charge who is licensed not less than one level below the category for the facility.

2. The facility is not located in the Coastal Management Program boundary.

3. The permittee shall comply with the requirements of 30 TAC § 309.13(a) through (d). In addition, by ownership of the required buffer zone area, the permittee shall comply with the requirements of 30 TAC § 309.13(e)(2). The permittee submitted a nuisance odor prevention plan which was approved by the TCEQ Wastewater Permitting Section on December 7, 2010. (See Attachment A.)

4. The permittee shall provide facilities for the protection of its wastewater treatment facility from a 100-year flood.

5. In accordance with 30 TAC § 319.9, a permittee that has at least twelve months of uninterrupted compliance with its bacteria limit may notify the commission in writing of its compliance and request a less frequent measurement schedule. To request a less frequent schedule, the permittee shall submit a written request to the TCEQ Wastewater Permitting Section (MC 148) for each phase that includes a different monitoring frequency. The request must contain all of the reported bacteria values (Daily Avg. and Daily Max/Single Grab) for the twelve consecutive months immediately prior to the request. If the Executive Director finds that a less frequent measurement schedule is protective of human health and the environment, the permittee may be given a less frequent measurement schedule. For this permit, 1/month may be reduced to 1/quarter. **A violation of any bacteria limit by a facility that has been granted a less frequent measurement schedule will require the permittee to return to the standard frequency schedule and submit written notice to the TCEQ Wastewater Permitting Section (MC 148).** The permittee may not apply for another reduction in measurement frequency for at least 24 months from the date of the last violation. The Executive Director may establish a more frequent measurement schedule if necessary to protect human health or the environment.

6. Within 60 days of issuance of this permit for the Final phase treatment facilities, the permittee shall submit to the TCEQ Wastewater Permitting Section (MC 148) a summary transmittal letter in accordance with the requirements in 30 TAC § 217.6(d). If requested by the Wastewater Permitting Section, the permittee shall submit plans, specifications, and a final engineering design report which comply with 30 TAC Chapter 217, Design Criteria for Domestic Wastewater Systems. The permittee shall clearly show how the treatment system

will meet the effluent limitations required on Page 2 of this permit. A copy of the summary transmittal letter shall be available at the plant site for inspection by authorized representatives of the TCEQ. **This provision is continued from the permit issued on October 18, 2013 which has not been complied with to date.**

7. The permittee shall notify the TCEQ Regional Office (MC Region 12) and the Applications Review and Processing Team (MC 148) of the Water Quality Division, in writing at least forty-five (45) days prior to the completion of the new facilities on Notification of Completion Form 20007. **This provision is continued from the permit issued on October 18, 2013 which has not been complied with to date.**

CONTRIBUTING INDUSTRIES AND PRETREATMENT REQUIREMENTS

1. The following pollutants may not be introduced into the treatment facility:

   a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, waste streams with a closed-cup flash point of less than 140° Fahrenheit (60° Celsius) using the test methods specified in 40 CFR § 261.21;

   b. Pollutants which will cause corrosive structural damage to the POTW, but in no case shall there be discharges with a pH lower than 5.0 standard units, unless the works are specifically designed to accommodate such discharges;

   c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, resulting in Interference;

   d. Any pollutant, including oxygen-demanding pollutants (e.g., biological oxygen demand or BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause Interference with the POTW;

   e. Heat in amounts which will inhibit biological activity in the POTW, resulting in Interference, but in no case shall there be heat in such quantities that the temperature at the POTW treatment plant exceeds 104° Fahrenheit (40° Celsius) unless the Executive Director, upon request of the POTW, approves alternate temperature limits;

   f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through;

   g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems; and

   h. Any trucked or hauled pollutants except at discharge points designated by the POTW.

2. The permittee shall require any indirect discharger to the treatment works to comply with the reporting requirements of Sections 204(b), 307, and 308 of the Clean Water Act, including any requirements established under 40 CFR Part 403 *[rev. Federal Register/ Vol. 70/ No. 198/ Friday, October 14, 2005/ Rules and Regulations, pages 60134-60798].*

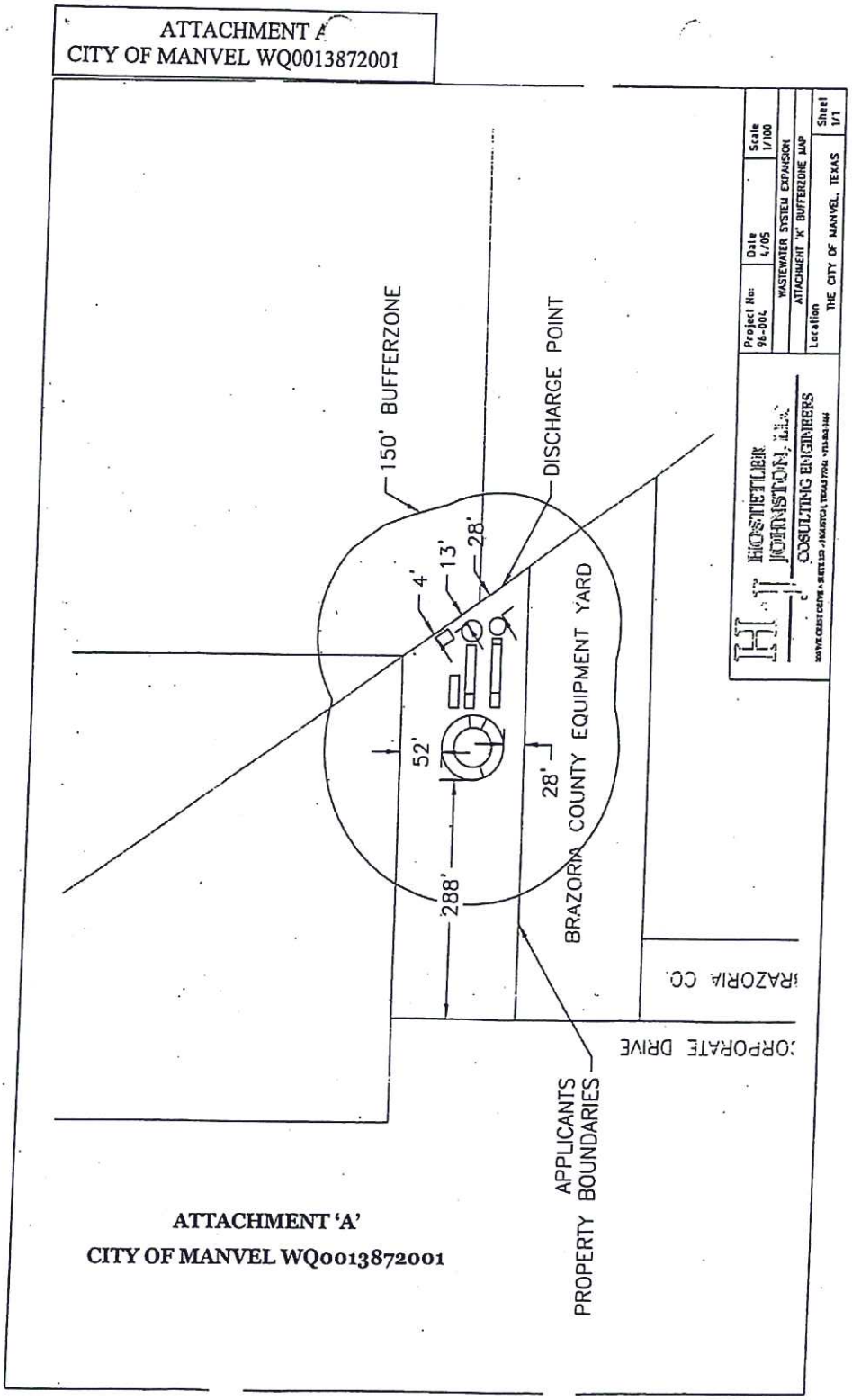
3. The permittee shall provide adequate notification to the Executive Director, care of the Wastewater Permitting Section (MC 148) of the Water Quality Division, within 30 days subsequent to the permittee's knowledge of either of the following:

   a. Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Sections 301 and 306 of the Clean Water Act if it were directly discharging those pollutants; and

   b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit.

   Any notice shall include information on the quality and quantity of effluent to be introduced into the treatment works and any anticipated impact of the change on the quality or quantity of effluent to be discharged from the POTW.

Revised July 2007


ATTACHMENT A
CITY OF MANVEL WQ0013872001
150' BUFFERZONE
DISCHARGE POINT
4'
13'
28'
52'
28'
288'
BRAZORIA COUNTY EQUIPMENT YARD
APPLICANTS PROPERTY BOUNDARIES
ATTACHMENT 'A'
CITY OF MANVEL WQ0013872001
Project No: 96-004
Date 4/05
Scale 1"=100'
WASTEWATER SYSTEM EXPANSION
ATTACHMENT "A" BUFFERZONE MAP
Location THE CITY OF MANVEL, TEXAS
Sheet 1/1
CONSULTING ENGINEERS

TPDES PERMIT NO.
WQ0014253001
[For TCEQ office use only - EPA I.D. No. TX0124001]

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. Box 13087
Austin, Texas 78711-3087

This is a renewal that replaces TPDES Permit No. WQ0014253001 issued on October 25, 2013.

PERMIT TO DISCHARGE WASTES
under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

Brazoria County Municipal Utility District No. 29

whose mailing address is

c/o Allen Boone Humphries Robinson, LLP
3200 Southwest Freeway, Suite 2600
Houston, Texas 77027

is authorized to treat and discharge wastes from the Rodeo Palms Wastewater Treatment Facility, SIC Code 4952

located at 3660 ½ Rodeo Palms Parkway, in the City of Manvel, in Brazoria County, Texas 77578

to Brazoria County Drainage District No. 4 Ditch E102-00-00; thence to Chocolate Bayou Above Tidal in Segment No. 1108 of the San Jacinto-Brazos Coastal Basin

only according to effluent limitations, monitoring requirements, and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight, **five years from the date of issuance**.

ISSUED DATE: October 30, 2018

For the Commission

INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

1. During the period beginning upon the date of issuance and lasting through the completion of expansion to the 0.45 million gallons per day (MGD) facility, the permittee is authorized to discharge subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 0.375 MGD, nor shall the average discharge during any two-hour period (2-hour peak) exceed 781 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg mg/l (lbs/day)	7-day Avg mg/l	Daily Max mg/l	Single Grab mg/l	Report Daily Avg. & Max. Single Grab Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	10 (31)	15	25	35	One/week	Grab
Total Suspended Solids	15 (47)	25	40	60	One/week	Grab
Ammonia Nitrogen	3 (9.4)	6	10	15	One /week	Grab
Total Dissolved Solids	900 (2,815)	N/A	N/A	N/A	One/week	Grab
E. coli, colony-forming units or most probable number per 100 ml	126	N/A	N/A	399	One/month	Grab

2. The effluent shall contain a chlorine residual of at least 1.0 mg/l and shall not exceed a chlorine residual of 4.0 mg/l after a detention time of at least 20 minutes (based on peak flow), and shall be monitored five times per week by grab sample. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored once per month by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location(s): Following the final treatment unit.

6. The effluent shall contain a minimum dissolved oxygen of 4.0 mg/l and shall be monitored once per week by grab sample.

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

1. During the period beginning upon the completion of expansion to the 0.45 million gallons per day (MGD) facility and lasting through the date of expiration, the permittee is authorized to discharge subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 0.450 MGD, nor shall the average discharge during any two-hour period (2-hour peak) exceed 885 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg mg/l (lbs/day)	7-day Avg mg/l	Daily Max mg/l	Single Grab mg/l	Report Daily Avg. & Max. Single Grab Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	10 (38)	15	25	35	One/week	Grab
Total Suspended Solids	15 (56)	25	40	60	One/week	Grab
Ammonia Nitrogen	3 (11)	6	10	15	One/week	Grab
Total Dissolved Solids	900 (3,378)	N/A	N/A	N/A	One/week	Grab
E. coli, colony-forming units or most probable number per 100 ml	126	N/A	N/A	399	One/month	Grab

2. The effluent shall contain a chlorine residual of at least 1.0 mg/l and shall not exceed a chlorine residual of 4.0 mg/l after a detention time of at least 20 minutes (based on peak flow), and shall be monitored five times per week by grab sample. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored once per month by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location(s): Following the final treatment unit.

6. The effluent shall contain minimum dissolved oxygen of 4.0 mg/l and shall be monitored once per week by grab sample.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC § 305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§ 5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§ 361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in TWC § 26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

    a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder and limited to major domestic wastewater discharge facilities with one million gallons per day or greater permitted flow.

    b. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.

    c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.

    d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.

    e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.

    f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calendar month.

2. Concentration Measurements

    a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.

        i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.

ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.

b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.

c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.

d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the sampling day.

The daily discharge determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily discharge determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

e. Bacteria concentration (*E. coli* or Enterococci) - Colony Forming Units (CFU) or Most Probable Number (MPN) of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or, computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements made in a calendar month. For any measurement of bacteria equaling zero, a substituted value of one shall be made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.

f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD x Concentration, mg/l x 8.34).

g. Daily maximum loading (lbs/day) - the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

3. Sample Type

a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (b).

b. Grab sample - an individual sample collected in less than 15 minutes.

4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.

5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes.

6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 - 319.12. Unless otherwise specified, effluent monitoring data shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge which is described by this permit whether or not a discharge is made for that month. Monitoring results must be submitted online using the NetDMR reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. Monitoring results must be signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act (CWA); TWC §§ 26, 27, and 28; and THSC § 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§ 319.11 - 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.

b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC § 25, Environmental Testing Laboratory Accreditation and Certification.

3. Records of Results

a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR § 264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.

c. Records of monitoring activities shall include the following:

i. date, time and place of sample or measurement;

ii. identity of individual who collected the sample or made the measurement.

iii. date and time of analysis;

iv. identity of the individual and laboratory who performed the analysis;

v. the technique or method of analysis; and

vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later

than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

7. Noncompliance Notification

   a. In accordance with 30 TAC § 305.125(9) any noncompliance which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Except as allowed by 30 TAC § 305.132, report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. For Publicly Owned Treatment Works (POTWs), effective September 1, 2020, the permittee must submit the written report for unauthorized discharges and unanticipated bypasses that exceed any effluent limit in the permit using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

   b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:

      i. Unauthorized discharges as defined in Permit Condition 2(g).

      ii. Any unanticipated bypass that exceeds any effluent limitation in the permit.

      iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

   c. In addition to the above, any effluent violation which deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.

   d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.

8. In accordance with the procedures described in 30 TAC §§ 35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.

9. Changes in Discharges of Toxic Substances

   All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   i. One hundred micrograms per liter (100 µg/L);

   ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

   iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or

   iv. The level established by the TCEQ.

b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   i. Five hundred micrograms per liter (500 µg/L);

   ii. One milligram per liter (1 mg/L) for antimony;

   iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or

   iv. The level established by the TCEQ.

10. Signatories to Reports

    All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).

11. All POTWs must provide adequate notice to the Executive Director of the following:

    a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to CWA § 301 or § 306 if it were directly discharging those pollutants;

    b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and

    c. For the purpose of this paragraph, adequate notice shall include information on:

       i. The quality and quantity of effluent introduced into the POTW; and

       ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

   a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

   b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:

      i. Violation of any terms or conditions of this permit;

      ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

      iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

   c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

   a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.

   b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility.

   c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

   d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation that has a reasonable likelihood of adversely affecting human health or the environment.

   e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.

f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§ 305.62 and 305.66 and TWC§ 7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.

h. In accordance with 30 TAC § 305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility which does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.

i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under TWC §§ 7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal CWA §§ 301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA § 402, or any requirement imposed in a pretreatment program approved under the CWA §§ 402 (a)(3) or 402 (b)(8).

3. Inspections and Entry

a. Inspection and entry shall be allowed as prescribed in the TWC Chapters 26, 27, and 28, and THSC § 361.

b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in TWC § 7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment and/or Renewal

   a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:

      i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC § 305.534 (relating to New Sources and New Dischargers); or

      ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9;

      iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

   b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.

   c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.

   d. Prior to accepting or generating wastes which are not described in the permit application or which would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.

   e. In accordance with the TWC § 26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.

   f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA § 307(a) for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be

modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA § 307(a) for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

   a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.

   b. A permit may be transferred only according to the provisions of 30 TAC § 305.64 (relating to Transfer of Permits) and 30 TAC § 50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

   This permit does not authorize any activity of hazardous waste storage, processing, or disposal that requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Relationship to Water Rights

   Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to TWC Chapter 11.

8. Property Rights

   A permit does not convey any property rights of any sort, or any exclusive privilege.

9. Permit Enforceability

   The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. Relationship to Permit Application

    The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

11. Notice of Bankruptcy

    a. Each permittee shall notify the Executive Director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 Bankruptcy) of the United States Code (11 USC) by or against:

       i. the permittee;

ii. an entity (as that term is defined in 11 USC, § 101(14)) controlling the permittee or listing the permit or permittee as property of the estate; or

iii. an affiliate (as that term is defined in 11 USC, § 101(2)) of the permittee.

b. This notification must indicate:

i. the name of the permittee and the permit number(s);

ii. the bankruptcy court in which the petition for bankruptcy was filed; and

iii. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.

2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§ 319.21 - 319.29 concerning the discharge of certain hazardous metals.

3. Domestic wastewater treatment facilities shall comply with the following provisions:

a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.

b. The permittee shall submit a closure plan for review and approval to the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment and/or other treatment unit regulated by this permit.

4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, and/or retention of inadequately treated wastewater.

5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.

6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC § 7.302(b)(6).

7. Documentation

   For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC §§ 1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words confidential business information on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.

   a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility which reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

      If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 169) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.

10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.

11. Facilities that generate industrial solid waste as defined in 30 TAC § 335.1 shall comply with these provisions:

    a. Any solid waste, as defined in 30 TAC § 335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

    b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.

    c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC § 335.8(b)(1), to the Environmental Cleanup Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Registration, Review, and Reporting Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC § 335.5.

e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC § 335 and must include the following, as it pertains to wastewater treatment and discharge:

   i. Volume of waste and date(s) generated from treatment process;
   ii. Volume of waste disposed of on-site or shipped off-site;
   iii. Date(s) of disposal;
   iv. Identity of hauler or transporter;
   v. Location of disposal site; and
   vi. Method of final disposal.

   The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC § 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC § 361.

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SLUDGE PROVISIONS

The permittee is authorized to dispose of sludge only at a Texas Commission on Environmental Quality (TCEQ) authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge. **The disposal of sludge by land application on property owned, leased or under the direct control of the permittee is a violation of the permit unless the site is authorized with the TCEQ. This provision does not authorize Distribution and Marketing of Class A or Class AB Sewage Sludge. This provision does not authorize the permittee to land apply sludge on property owned, leased or under the direct control of the permittee.**

SECTION I. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE LAND APPLICATION

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC § 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. In all cases, if the person (permit holder) who prepares the sewage sludge supplies the sewage sludge to another person for land application use or to the owner or lease holder of the land, the permit holder shall provide necessary information to the parties who receive the sludge to assure compliance with these regulations.

3. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

B. Testing Requirements

1. Sewage sludge shall be tested once during the term of this permit in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I [Toxicity Characteristic Leaching Procedure (TCLP)] or other method that receives the prior approval of the TCEQ for the contaminants listed in 40 CFR Part 261.24, Table 1. Sewage sludge failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal. Following failure of any TCLP test, the management or disposal of sewage sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division and the Regional Director (MC Region 12) within seven (7) days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Registration, Review, and Reporting Division (MC 129), Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 12) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

2. Sewage sludge shall not be applied to the land if the concentration of the pollutants exceeds the pollutant concentration criteria in Table 1. The frequency of testing for pollutants in Table 1 is found in Section I.C.

TABLE 1

Pollutant	Ceiling Concentration (Milligrams per kilogram)*
Arsenic	75
Cadmium	85
Chromium	3000
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
PCBs	49
Selenium	100
Zinc	7500

* Dry weight basis

3. Pathogen Control

All sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site must be treated by one of the following methods to ensure that the sludge meets either the Class A, Class AB or Class B pathogen requirements.

a. For sewage sludge to be classified as Class A with respect to pathogens, the density of fecal coliform in the sewage sludge be less than 1,000 most probable number (MPN) per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met.

Alternative 1 - The temperature of the sewage sludge that is used or disposed shall be maintained at or above a specific value for a period of time. See 30 TAC § 312.82(a)(2)(A) for specific information.

Alternative 5 (PFRP) - Sewage sludge that is used or disposed of must be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in 40 CFR Part 503, Appendix B. PFRP include composting, heat drying, heat treatment, and thermophilic aerobic digestion.

Alternative 6 (PFRP Equivalent) - Sewage sludge that is used or disposed of must be treated in a process that has been approved by the U. S. Environmental Protection Agency as being equivalent to those in Alternative 5.

b. For sewage sludge to be classified as Class AB with respect to pathogens, the density of fecal coliform in the sewage sludge be less than 1,000 MPN per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met.

   Alternative 2 - The pH of the sewage sludge that is used or disposed shall be raised to above 12 std. units and shall remain above 12 std. units for 72 hours.

   The temperature of the sewage sludge shall be above 52° Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12 std. units.

   At the end of the 72-hour period during which the pH of the sewage sludge is above 12 std. units, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50%.

   Alternative 3 - The sewage sludge shall be analyzed for enteric viruses prior to pathogen treatment. The limit for enteric viruses is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(i-iii) for specific information. The sewage sludge shall be analyzed for viable helminth ova prior to pathogen treatment. The limit for viable helminth ova is less than one per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(iv-vi) for specific information.

   Alternative 4 - The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed.

c. Sewage sludge that meets the requirements of Class AB sewage sludge may be classified a Class A sewage sludge if a variance request is submitted in writing that is supported by substantial documentation demonstrating equivalent methods for reducing odors and written approval is granted by the executive director. The executive director may deny the variance request or revoke that approved variance if it is determined that the variance may potentially endanger human health or the environment, or create nuisance odor conditions.

d. Three alternatives are available to demonstrate compliance with Class B criteria for

sewage sludge.

Alternative 1

i. A minimum of seven random samples of the sewage sludge shall be collected within 48 hours of the time the sewage sludge is used or disposed of during each monitoring episode for the sewage sludge.

ii. The geometric mean of the density of fecal coliform in the samples collected shall be less than either 2,000,000 MPN per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

Alternative 2 - Sewage sludge that is used or disposed of shall be treated in one of the Processes to Significantly Reduce Pathogens (PSRP) described in 40 CFR Part 503, Appendix B, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

ii. An independent Texas Licensed Professional Engineer must make a certification to the generator of a sewage sludge that the wastewater treatment facility generating the sewage sludge is designed to achieve one of the PSRP at the permitted design loading of the facility. The certification need only be repeated if the design loading of the facility is increased. The certification shall include a statement indicating the design meets all the applicable standards specified in Appendix B of 40 CFR Part 503;

iii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iv. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review; and

v. If the sewage sludge is generated from a mixture of sources, resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the PSRP, and shall meet the certification, operation, and record keeping requirements of this paragraph.

Alternative 3 - Sewage sludge shall be treated in an equivalent process that has been approved by the U.S. Environmental Protection Agency, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a

single location, except as provided in paragraph v. below;

ii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iii. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review;

iv. The Executive Director will accept from the U.S. Environmental Protection Agency a finding of equivalency to the defined PSRP; and

v. If the sewage sludge is generated from a mixture of sources resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the Processes to Significantly Reduce Pathogens, and shall meet the certification, operation, and record keeping requirements of this paragraph.

In addition, the following site restrictions must be met if Class B sludge is land applied:

i. Food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of sewage sludge.

ii. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for 4 months or longer prior to incorporation into the soil.

iii. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than 4 months prior to incorporation into the soil.

iv. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge.

v. Animals shall not be allowed to graze on the land for 30 days after application of sewage sludge.

vi. Turf grown on land where sewage sludge is applied shall not be harvested for 1 year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn.

vii. Public access to land with a high potential for public exposure shall be restricted for 1 year after application of sewage sludge.
viii. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.

ix. Land application of sludge shall be in accordance with the buffer zone requirements found in 30 TAC § 312.44.

4. Vector Attraction Reduction Requirements

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall be treated by one of the following Alternatives 1 through 10 for vector attraction reduction.

Alternative 1 - The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38%.

Alternative 2 - If Alternative 1 cannot be met for an anaerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30° and 37° Celsius. Volatile solids must be reduced by less than 17% to demonstrate compliance.

Alternative 3 - If Alternative 1 cannot be met for an aerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge with percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20° Celsius. Volatile solids must be reduced by less than 15% to demonstrate compliance.

Alternative 4 - The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20° Celsius.

Alternative 5 - Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40° Celsius and the average temperature of the sewage sludge shall be higher than 45° Celsius.

Alternative 6 - The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali shall remain at 12 or higher for two hours and then remain at a pH of 11.5 or higher for an additional 22 hours at the time the sewage sludge is prepared for sale or given away in a bag or other container.

Alternative 7 - The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75% based on the moisture content and total solids prior to mixing with other materials. Unstabilized solids are defined as organic materials in sewage sludge that have not been

treated in either an aerobic or anaerobic treatment process.

Alternative 8 - The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90% based on the moisture content and total solids prior to mixing with other materials at the time the sludge is used. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 9 -

i. Sewage sludge shall be injected below the surface of the land.

ii. No significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected.

iii. When sewage sludge that is injected below the surface of the land is Class A or Class AB with respect to pathogens, the sewage sludge shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process.

Alternative 10-

i. Sewage sludge applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land.

ii. When sewage sludge that is incorporated into the soil is Class A or Class AB with respect to pathogens, the sewage sludge shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.

C. Monitoring Requirements

Toxicity Characteristic Leaching Procedure (TCLP) Test	- once during the term of this permit
PCBs	- once during the term of this permit

All metal constituents and fecal coliform or *Salmonella* sp. bacteria shall be monitored at the appropriate frequency shown below, pursuant to 30 TAC § 312.46(a)(1):

Amount of sewage sludge (*) metric tons per 365-day period	Monitoring Frequency
0 to less than 290	Once/Year
290 to less than 1,500	Once/Quarter
1,500 to less than 15,000	Once/Two Months
15,000 or greater	Once/Month

(*) *The amount of bulk sewage sludge applied to the land (dry wt. basis).*

Representative samples of sewage sludge shall be collected and analyzed in accordance with the methods referenced in 30 TAC § 312.7

Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella sp.*, and other regulated parameters.

Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

SECTION II. REQUIREMENTS SPECIFIC TO BULK SEWAGE SLUDGE FOR APPLICATION TO THE LAND MEETING CLASS A, CLASS AB or B PATHOGEN REDUCTION AND THE CUMULATIVE LOADING RATES IN TABLE 2, OR CLASS B PATHOGEN REDUCTION AND THE POLLUTANT CONCENTRATIONS IN TABLE 3

For those permittees meeting Class A, Class AB or B pathogen reduction requirements and that meet the cumulative loading rates in Table 2 below, or the Class B pathogen reduction requirements and contain concentrations of pollutants below listed in Table 3, the following conditions apply:

A. Pollutant Limits

Table 2

Pollutant	Cumulative Pollutant Loading Rate (pounds per acre)*
Arsenic	36
Cadmium	35
Chromium	2677
Copper	1339
Lead	268
Mercury	15
Molybdenum	Report Only
Nickel	375
Selenium	89
Zinc	2500

Table 3

Pollutant	Monthly Average Concentration (milligrams per kilogram)*
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	Report Only
Nickel	420
Selenium	36
Zinc	2800

*Dry weight basis

B. Pathogen Control

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, a reclamation site, shall be treated by either Class A, Class AB or Class B pathogen reduction requirements as defined above in Section I.B.3.

C. Management Practices

1. Bulk sewage sludge shall not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other waters in the State.

2. Bulk sewage sludge not meeting Class A requirements shall be land applied in a manner which complies with Applicability in accordance with 30 TAC §312.41 and the Management Requirements in accordance with 30 TAC § 312.44.

3. Bulk sewage sludge shall be applied at or below the agronomic rate of the cover crop.

4. An information sheet shall be provided to the person who receives bulk sewage sludge sold or given away. The information sheet shall contain the following information:

   a. The name and address of the person who prepared the sewage sludge that is sold or given away in a bag or other container for application to the land.

   b. A statement that application of the sewage sludge to the land is prohibited except in accordance with the instruction on the label or information sheet.

   c. The annual whole sludge application rate for the sewage sludge application rate for the sewage sludge that does not cause any of the cumulative pollutant loading rates in Table 2 above to be exceeded, unless the pollutant concentrations in Table 3 found in Section II above are met.

D. Notification Requirements

1. If bulk sewage sludge is applied to land in a State other than Texas, written notice shall be provided prior to the initial land application to the permitting authority for the State in which the bulk sewage sludge is proposed to be applied. The notice shall include:

   a. The location, by street address, and specific latitude and longitude, of each land application site.

   b. The approximate time period bulk sewage sludge will be applied to the site.

   c. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) for the person who will apply the bulk sewage sludge.

2. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

E. Record keeping Requirements

The sludge documents will be retained at the facility site and/or shall be readily available for review by a TCEQ representative. The person who prepares bulk sewage sludge or a sewage sludge material shall develop the following information and shall retain the information at

the facility site and/or shall be readily available for review by a TCEQ representative for a period of five years. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply.

1. The concentration (mg/kg) in the sludge of each pollutant listed in Table 3 above and the applicable pollutant concentration criteria (mg/kg), or the applicable cumulative pollutant loading rate and the applicable cumulative pollutant loading rate limit (lbs/ac) listed in Table 2 above.

2. A description of how the pathogen reduction requirements are met (including site restrictions for Class AB and Class B sludge, if applicable).

3. A description of how the vector attraction reduction requirements are met.

4. A description of how the management practices listed above in Section II.C are being met.

5. The following certification statement:

   "I certify, under penalty of law, that the applicable pathogen requirements in 30 TAC § 312.82(a) or (b) and the vector attraction reduction requirements in 30 TAC § 312.83(b) have been met for each site on which bulk sewage sludge is applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices have been met. I am aware that there are significant penalties for false certification including fine and imprisonment."

6. The recommended agronomic loading rate from the references listed in Section II.C.3. above, as well as the actual agronomic loading rate shall be retained. The person who applies bulk sewage sludge or a sewage sludge material shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative indefinitely. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply:

   a. A certification statement that all applicable requirements (specifically listed) have been met, and that the permittee understands that there are significant penalties for false certification including fine and imprisonment. See 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii), as applicable, and to the permittee's specific sludge treatment activities.

   b. The location, by street address, and specific latitude and longitude, of each site on which sludge is applied.

   c. The number of acres in each site on which bulk sludge is applied.

   d. The date and time sludge is applied to each site.

e. The cumulative amount of each pollutant in pounds/acre listed in Table 2 applied to each site.

f. The total amount of sludge applied to each site in dry tons.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

F. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year the following information. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

3. Results of tests performed for pollutants found in either Table 2 or 3 as appropriate for the permittee's land application practices.

4. The frequency of monitoring listed in Section I.C. that applies to the permittee.

5. Toxicity Characteristic Leaching Procedure (TCLP) results.

6. PCB concentration in sludge in mg/kg.

7. Identity of hauler(s) and TCEQ transporter number.

8. Date(s) of transport.

9. Texas Commission on Environmental Quality registration number, if applicable.

10. Amount of sludge disposal dry weight (lbs/acre) at each disposal site.

11. The concentration (mg/kg) in the sludge of each pollutant listed in Table 1 (defined as a monthly average) as well as the applicable pollutant concentration criteria (mg/kg) listed in Table 3 above, or the applicable pollutant loading rate limit (lbs/acre) listed in Table 2 above if it exceeds 90% of the limit.

12. Level of pathogen reduction achieved (Class A, Class AB or Class B).

13. Alternative used as listed in Section I.B.3.(a. or b.). Alternatives describe how the pathogen reduction requirements are met. If Class B sludge, include information on how site restrictions were met.

14. Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella sp.*, and other regulated parameters.

15. Vector attraction reduction alternative used as listed in Section I.B.4.

16. Amount of sludge transported in dry tons/year.

17. The certification statement listed in either 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii) as applicable to the permittee's sludge treatment activities, shall be attached to the annual reporting form.

18. When the amount of any pollutant applied to the land exceeds 90% of the cumulative pollutant loading rate for that pollutant, as described in Table 2, the permittee shall report the following information as an attachment to the annual reporting form.

    a. The location, by street address, and specific latitude and longitude.

    b. The number of acres in each site on which bulk sewage sludge is applied.

    c. The date and time bulk sewage sludge is applied to each site.

    d. The cumulative amount of each pollutant (i.e., pounds/acre) listed in Table 2 in the bulk sewage sludge applied to each site.

    e. The amount of sewage sludge (i.e., dry tons) applied to each site.

    The above records shall be maintained on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION III. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE DISPOSED IN A MUNICIPAL SOLID WASTE LANDFILL

A. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC § 330 and all other applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present. The permittee shall ensure that the sewage sludge meets the requirements in 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

B. If the permittee generates sewage sludge and supplies that sewage sludge to the owner or operator of a municipal solid waste landfill (MSWLF) for disposal, the permittee shall provide to the owner or operator of the MSWLF appropriate information needed to be in compliance with the provisions of this permit.

C. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

D. Sewage sludge shall be tested once during the term of this permit in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I (Toxicity Characteristic Leaching Procedure) or other method, which receives the prior approval of the TCEQ for contaminants listed in Table 1 of 40 CFR § 261.24. Sewage sludge failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal.

Following failure of any TCLP test, the management or disposal of sewage sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division and the Regional Director (MC Region 12) of the appropriate TCEQ field office within 7 days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Registration, Review, and Reporting Division (MC 129), Texas Commission on Environmental Quality, P. O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 12) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30 of each year.

E. Sewage sludge shall be tested as needed, in accordance with the requirements of 30 TAC Chapter 330.

F. Record keeping Requirements

The permittee shall develop the following information and shall retain the information for five years.

1. The description (including procedures followed and the results) of all liquid Paint Filter Tests performed.

2. The description (including procedures followed and results) of all TCLP tests performed.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

G. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year the following information. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Toxicity Characteristic Leaching Procedure (TCLP) results.

3. Annual sludge production in dry tons/year.

4. Amount of sludge disposed in a municipal solid waste landfill in dry tons/year.

5. Amount of sludge transported interstate in dry tons/year.

6. A certification that the sewage sludge meets the requirements of 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

7. Identity of hauler(s) and transporter registration number.

8. Owner of disposal site(s).

9. Location of disposal site(s).

10. Date(s) of disposal.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION IV. REQUIREMENTS APPLYING TO SLUDGE TRANSPORTED TO ANOTHER FACILITY FOR FURTHER PROCESSING

These provisions apply to sludge that is transported to another wastewater treatment facility or facility that further processes sludge. These provisions are intended to allow transport of sludge to facilities that have been authorized to accept sludge. These provisions do not limit the ability of the receiving facility to determine whether to accept the sludge, nor do they limit the ability of the receiving facility to request additional testing or documentation.

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC Chapter 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. Sludge may only be transported using a registered transporter or using an approved pipeline.

B. Record Keeping Requirements

1. For sludge transported by an approved pipeline, the permittee must maintain records of the following:

   a. the amount of sludge transported;

   b. the date of transport;

   c. the name and TCEQ permit number of the receiving facility or facilities;

   d. the location of the receiving facility or facilities;

   e. the name and TCEQ permit number of the facility that generated the waste; and

   f. copy of the written agreement between the permittee and the receiving facility to accept sludge.

2. For sludge transported by a registered transporter, the permittee must maintain records of the completed trip tickets in accordance with 30 TAC § 312.145(a)(1)-(7) and amount of sludge transported.

3. The above records shall be maintained on-site on a monthly basis and shall be made available to the TCEQ upon request. These records shall be retained for at least five years.

C. Reporting Requirements

The permittee shall report the following information annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. the annual sludge production;

3. the amount of sludge transported;

4. the owner of each receiving facility;

5. the location of each receiving facility; and

6. the date(s) of disposal at each receiving facility.

TCEQ Revision 01/2016

OTHER REQUIREMENTS

1. The permittee shall employ or contract with one or more licensed wastewater treatment facility operators or wastewater system operations companies holding a valid license or registration according to the requirements of 30 TAC Chapter 30, Occupational Licenses and Registrations, and in particular 30 TAC Chapter 30, Subchapter J, Wastewater Operators and Operations Companies.

   This Category C facility must be operated by a chief operator or an operator holding a Category C license or higher. The facility must be operated a minimum of five days per week by the licensed chief operator or an operator holding the required level of license or higher. The licensed chief operator or operator holding the required level of license or higher must be available by telephone or pager seven days per week. Where shift operation of the wastewater treatment facility is necessary, each shift which does not have the on-site supervision of the licensed chief operator must be supervised by an operator in charge who is licensed not less than one level below the category for the facility.

2. The facility is not located in the Coastal Management Program boundary.

3. The permittee shall comply with the requirements of 30 TAC § 309.13 (a) through (d). In addition, by ownership of the required buffer zone area and Brazoria County Drainage easements, the permittee complies with the requirements of 30 TAC § 309.13(e)(3). (See Attachment A).

4. The permittee shall provide facilities for the protection of its wastewater treatment facility from a 100-year flood.

5. In accordance with 30 TAC § 319.9, a permittee that has at least twelve months of uninterrupted compliance with its bacteria limit may notify the commission in writing of its compliance and request a less frequent measurement schedule. To request a less frequent schedule, the permittee shall submit a written request to the TCEQ Wastewater Permitting Section (MC 148) for each phase that includes a different monitoring frequency. The request must contain all of the reported bacteria values (Daily Avg. and Daily Max/Single Grab) for the twelve consecutive months immediately prior to the request. If the Executive Director finds that a less frequent measurement schedule is protective of human health and the environment, the permittee may be given a less frequent measurement schedule. For this permit, 1/month may be reduced to 1/quarter in the Interim phase and Final phase. **A violation of any bacteria limit by a facility that has been granted a less frequent measurement schedule will require the permittee to return to the standard frequency schedule and submit written notice to the TCEQ Wastewater Permitting Section (MC 148).** The permittee may not apply for another reduction in measurement frequency for at least 24 months from the date of the last violation. The Executive Director may establish a more frequent measurement schedule if necessary to protect human health or the environment.

6. The permittee shall provide written notice to the TCEQ Regional Office (MC Region 12) and the Applications Review and Processing Team (MC 148) of the Water Quality Division at least forty-five (45) days prior to completion of final phase on Notification of Completion Form 20007.

CONTRIBUTING INDUSTRIES AND PRETREATMENT REQUIREMENTS

1. The following pollutants may not be introduced into the treatment facility:

   a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, waste streams with a closed-cup flash point of less than 140° Fahrenheit (60° Celsius) using the test methods specified in 40 CFR § 261.21;

   b. Pollutants which will cause corrosive structural damage to the POTW, but in no case shall there be discharges with a pH lower than 5.0 standard units, unless the works are specifically designed to accommodate such discharges;

   c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, resulting in Interference;

   d. Any pollutant, including oxygen-demanding pollutants (e.g., biological oxygen demand or BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause Interference with the POTW;

   e. Heat in amounts which will inhibit biological activity in the POTW, resulting in Interference, but in no case shall there be heat in such quantities that the temperature at the POTW treatment plant exceeds 104° Fahrenheit (40° Celsius) unless the Executive Director, upon request of the POTW, approves alternate temperature limits;

   f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through;

   g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems; and

   h. Any trucked or hauled pollutants except at discharge points designated by the POTW.

2. The permittee shall require any indirect discharger to the treatment works to comply with the reporting requirements of Sections 204(b), 307, and 308 of the Clean Water Act, including any requirements established under 40 CFR Part 403 *[rev. Federal Register/ Vol. 70/ No. 198/ Friday, October 14, 2005/ Rules and Regulations, pages 60134-60798].*

3. The permittee shall provide adequate notification to the Executive Director, care of the Wastewater Permitting Section (MC 148) of the Water Quality Division, within 30 days subsequent to the permittee's knowledge of either of the following:

   a. Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Sections 301 and 306 of the Clean Water Act if it were directly discharging those pollutants; and

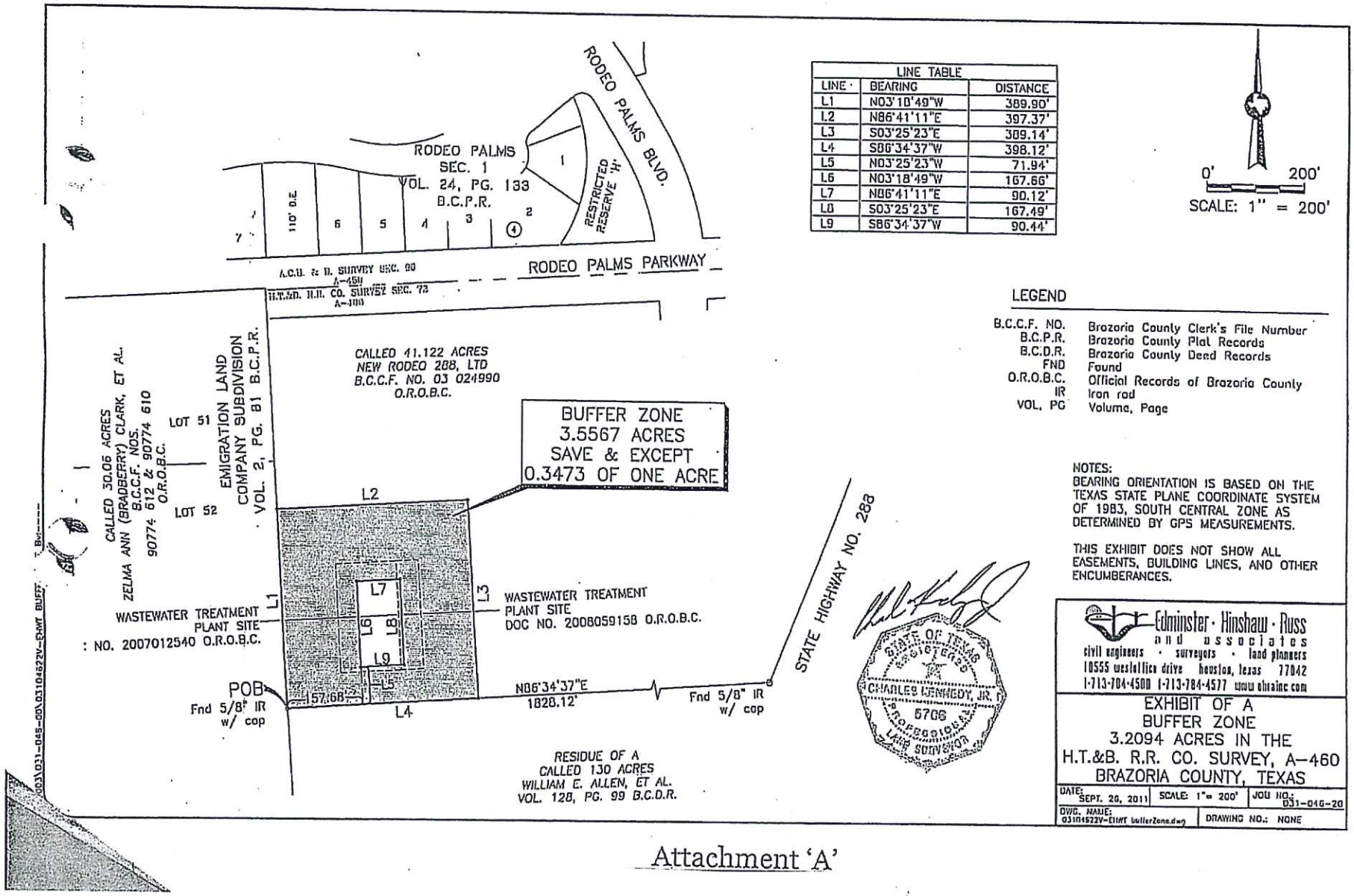
   b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit.

   Any notice shall include information on the quality and quantity of effluent to be introduced into the treatment works and any anticipated impact of the change on the quality or quantity of effluent to be discharged from the POTW.

Revised July 2007

WQ0014253001

Brazoria County Municipal Utility District No. 29



LINE TABLE		
LINE	BEARING	DISTANCE
L1	N03°10'49"W	389.90'
L2	N86°41'11"E	397.37'
L3	S03°25'23"E	389.14'
L4	S86°34'37"W	398.12'
L5	N03°25'23"W	71.94'
L6	N03°18'49"W	167.66'
L7	N86°41'11"E	90.12'
L8	S03°25'23"E	167.49'
L9	S86°34'37"W	90.44'

LEGEND

B.C.C.F. NO.	Brazoria County Clerk's File Number
B.C.P.R.	Brazoria County Plat Records
B.C.D.R.	Brazoria County Deed Records
FND	Found
O.R.O.B.C.	Official Records of Brazoria County
IR	Iron rod
VOL, PG	Volume, Page

NOTES:
BEARING ORIENTATION IS BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE AS DETERMINED BY GPS MEASUREMENTS.

THIS EXHIBIT DOES NOT SHOW ALL EASEMENTS, BUILDING LINES, AND OTHER ENCUMBERANCES.

STATE OF TEXAS REGISTERED CHARLES KENNEDY, JR. 5706 PROFESSIONAL LAND SURVEYOR

Edminster · Hinshaw · Russ and associates
civil engineers · surveyors · land planners
10555 westoffice drive houston, texas 77042
1-713-784-4500 1-713-784-4577 www.ehraine.com

EXHIBIT OF A
BUFFER ZONE
3.2094 ACRES IN THE
H.T.&B. R.R. CO. SURVEY, A-460
BRAZORIA COUNTY, TEXAS

DATE: SEPT. 20, 2011	SCALE: 1"= 200'	JOB NO.: 031-045-20
DWG. NAME: 03104522V-EIMT BufferZone.dwg	DRAWING NO.: NONE	

Attachment 'A'

TPDES PERMIT NO.
WQ0014756001
[For TCEQ office use only - EPA I.D. No. TX0129178]

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. Box 13087
Austin, Texas 78711-3087

This is a renewal that replaces TPDES Permit No. WQ0014756001 issued on March 7, 2014.

PERMIT TO DISCHARGE WASTES
under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

Sedona Lakes Municipal Utility District No. 1

whose mailing address is

c/o Sanford Kuhl Hagan Kugle Parker Kahn, LLP
1980 Post Oak Boulevard, Suite 1380
Houston, Texas 77056

is authorized to treat and discharge wastes from the Sedona Lakes Wastewater Treatment Facility, SIC Code 4952

located approximately 1.1 miles east-northeast of the intersection of County Road 58 and State Highway 288, in Brazoria County, Texas 77578

to Mustang Bayou; thence to Persimmon Bayou; thence to New Bayou; thence to Chocolate Bay in Segment No. 2432 of the Bays and Estuaries

only according to effluent limitations, monitoring requirements, and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight, **five years from the date of issuance**.

ISSUED DATE: December 3, 2018

For the Commission

INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

1. During the period beginning upon the date of issuance and lasting through the completion of expansion of the 0.60 million gallons per day (MGD) facilities, the permittee is authorized to discharge subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 0.30 MGD, nor shall the average discharge during any two-hour period (2-hour peak) exceed 833 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg mg/l (lbs/day)	7-day Avg mg/l	Daily Max mg/l	Single Grab mg/l	Report Daily Avg. & Max. Single Grab Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Biochemical Oxygen Demand (5-day)	10 (25)	15	25	35	One/week	Grab
Total Suspended Solids	15 (38)	25	40	60	One/week	Grab
E. coli, colony-forming units or most probable number per 100 ml	126	N/A	N/A	399	One/month	Grab

2. The effluent shall contain a chlorine residual of at least 1.0 mg/l and shall not exceed a chlorine residual of 4.0 mg/l after a detention time of at least 20 minutes (based on peak flow), and shall be monitored five times per week by grab sample at each chlorine contact chamber. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored once per month by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location(s): Following the final treatment unit.

6. The effluent shall contain a minimum dissolved oxygen of 4.0 mg/l and shall be monitored once per week by grab sample.

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

1. During the period beginning upon the completion of expansion of the 0.60 million gallons per day (MGD) facilities and lasting through the date of expiration, the permittee is authorized to discharge subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 0.60 MGD, nor shall the average discharge during any two-hour period (2-hour peak) exceed 1,667 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg mg/l (lbs/day)	7-day Avg mg/l	Daily Max mg/l	Single Grab mg/l	Report Daily Avg. & Daily max Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	10 (50)	15	25	35	One/week	Composite
Total Suspended Solids	15 (75)	25	40	60	One/week	Composite
Ammonia Nitrogen	3 (15)	6	10	15	One/week	Composite
E. coli, colony-forming units or most probable number per 100 ml	126	N/A	399	N/A	Two/month	Grab

2. The effluent shall contain a chlorine residual of at least 1.0 mg/l and shall not exceed a chlorine residual of 4.0 mg/l after a detention time of at least 20 minutes (based on peak flow), and shall be monitored daily by grab sample at each chlorine contact chamber. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored twice per month by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location(s): Following the final treatment unit.

6. The effluent shall contain minimum dissolved oxygen of 4.0 mg/l and shall be monitored once per week by grab sample.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC § 305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§ 5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§ 361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in TWC § 26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

    a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder and limited to major domestic wastewater discharge facilities with one million gallons per day or greater permitted flow.

    b. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.

    c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.

    d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.

    e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.

    f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calendar month.

2. Concentration Measurements

    a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.

        i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.

ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.

b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.

c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.

d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the sampling day.

The daily discharge determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily discharge determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

e. Bacteria concentration (*E. coli* or Enterococci) - Colony Forming Units (CFU) or Most Probable Number (MPN) of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or, computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements made in a calendar month. For any measurement of bacteria equaling zero, a substituted value of one shall be made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.

f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD x Concentration, mg/l x 8.34).

g. Daily maximum loading (lbs/day) - the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

3. Sample Type

a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (b).

b. Grab sample - an individual sample collected in less than 15 minutes.

4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.

5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes.

6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 - 319.12. Unless otherwise specified, effluent monitoring data shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge which is described by this permit whether or not a discharge is made for that month. Monitoring results must be submitted online using the NetDMR reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. Monitoring results must be signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act (CWA); TWC §§ 26, 27, and 28; and THSC § 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§ 319.11 - 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.

b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC § 25, Environmental Testing Laboratory Accreditation and Certification.

3. Records of Results

a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR § 264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.

c. Records of monitoring activities shall include the following:

i. date, time and place of sample or measurement;

ii. identity of individual who collected the sample or made the measurement.

iii. date and time of analysis;

iv. identity of the individual and laboratory who performed the analysis;

v. the technique or method of analysis; and

vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later

than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

7. Noncompliance Notification

   a. In accordance with 30 TAC § 305.125(9) any noncompliance which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Except as allowed by 30 TAC § 305.132, report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. For Publicly Owned Treatment Works (POTWs), effective September 1, 2020, the permittee must submit the written report for unauthorized discharges and unanticipated bypasses that exceed any effluent limit in the permit using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

   b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:

      i. Unauthorized discharges as defined in Permit Condition 2(g).

      ii. Any unanticipated bypass that exceeds any effluent limitation in the permit.

      iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

   c. In addition to the above, any effluent violation which deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.

   d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.

8. In accordance with the procedures described in 30 TAC §§ 35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.

9. Changes in Discharges of Toxic Substances

   All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   i. One hundred micrograms per liter (100 µg/L);

   ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

   iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or

   iv. The level established by the TCEQ.

b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   i. Five hundred micrograms per liter (500 µg/L);

   ii. One milligram per liter (1 mg/L) for antimony;

   iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or

   iv. The level established by the TCEQ.

10. Signatories to Reports

    All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).

11. All POTWs must provide adequate notice to the Executive Director of the following:

    a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to CWA § 301 or § 306 if it were directly discharging those pollutants;

    b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and

    c. For the purpose of this paragraph, adequate notice shall include information on:

       i. The quality and quantity of effluent introduced into the POTW; and

       ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

   a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

   b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:

      i. Violation of any terms or conditions of this permit;

      ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

      iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

   c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

   a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.

   b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility.

   c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

   d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation that has a reasonable likelihood of adversely affecting human health or the environment.

   e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.

f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§ 305.62 and 305.66 and TWC§ 7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.

h. In accordance with 30 TAC § 305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility which does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.

i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under TWC §§ 7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal CWA §§ 301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA § 402, or any requirement imposed in a pretreatment program approved under the CWA §§ 402 (a)(3) or 402 (b)(8).

3. Inspections and Entry

a. Inspection and entry shall be allowed as prescribed in the TWC Chapters 26, 27, and 28, and THSC § 361.

b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in TWC § 7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment and/or Renewal

   a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:

      i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC § 305.534 (relating to New Sources and New Dischargers); or

      ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9;

      iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

   b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.

   c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.

   d. Prior to accepting or generating wastes which are not described in the permit application or which would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.

   e. In accordance with the TWC § 26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.

   f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA § 307(a) for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be

modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA § 307(a) for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

   a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.

   b. A permit may be transferred only according to the provisions of 30 TAC § 305.64 (relating to Transfer of Permits) and 30 TAC § 50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

   This permit does not authorize any activity of hazardous waste storage, processing, or disposal that requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Relationship to Water Rights

   Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to TWC Chapter 11.

8. Property Rights

   A permit does not convey any property rights of any sort, or any exclusive privilege.

9. Permit Enforceability

   The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. Relationship to Permit Application

    The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

11. Notice of Bankruptcy

    a. Each permittee shall notify the Executive Director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 Bankruptcy) of the United States Code (11 USC) by or against:

       i. the permittee;

ii. an entity (as that term is defined in 11 USC, § 101(14)) controlling the permittee or listing the permit or permittee as property of the estate; or

iii. an affiliate (as that term is defined in 11 USC, § 101(2)) of the permittee.

b. This notification must indicate:

i. the name of the permittee and the permit number(s);

ii. the bankruptcy court in which the petition for bankruptcy was filed; and

iii. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.

2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§ 319.21 - 319.29 concerning the discharge of certain hazardous metals.

3. Domestic wastewater treatment facilities shall comply with the following provisions:

a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.

b. The permittee shall submit a closure plan for review and approval to the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment and/or other treatment unit regulated by this permit.

4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, and/or retention of inadequately treated wastewater.

5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.

6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC § 7.302(b)(6).

7. Documentation

   For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC §§ 1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words confidential business information on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.

   a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility which reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

      If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 169) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.

10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.

11. Facilities that generate industrial solid waste as defined in 30 TAC § 335.1 shall comply with these provisions:

a. Any solid waste, as defined in 30 TAC § 335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.

c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC § 335.8(b)(1), to the Environmental Cleanup Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Registration, Review, and Reporting Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC § 335.5.

e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC § 335 and must include the following, as it pertains to wastewater treatment and discharge:

   i. Volume of waste and date(s) generated from treatment process;
   ii. Volume of waste disposed of on-site or shipped off-site;
   iii. Date(s) of disposal;
   iv. Identity of hauler or transporter;
   v. Location of disposal site; and
   vi. Method of final disposal.

   The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC § 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC § 361.

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SLUDGE PROVISIONS

The permittee is authorized to dispose of sludge only at a Texas Commission on Environmental Quality (TCEQ) authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge. **The disposal of sludge by land application on property owned, leased or under the direct control of the permittee is a violation of the permit unless the site is authorized with the TCEQ. This provision does not authorize Distribution and Marketing of Class A or Class AB Sewage Sludge. This provision does not authorize the permittee to land apply sludge on property owned, leased or under the direct control of the permittee.**

SECTION I. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE LAND APPLICATION

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC § 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. In all cases, if the person (permit holder) who prepares the sewage sludge supplies the sewage sludge to another person for land application use or to the owner or lease holder of the land, the permit holder shall provide necessary information to the parties who receive the sludge to assure compliance with these regulations.

3. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

B. Testing Requirements

1. Sewage sludge shall be tested once during the term of this permit in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I [Toxicity Characteristic Leaching Procedure (TCLP)] or other method that receives the prior approval of the TCEQ for the contaminants listed in 40 CFR Part 261.24, Table 1. Sewage sludge failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal. Following failure of any TCLP test, the management or disposal of sewage sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division and the Regional Director (MC Region 12) within seven (7) days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Registration, Review, and Reporting Division (MC 129), Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 12) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

2. Sewage sludge shall not be applied to the land if the concentration of the pollutants exceeds the pollutant concentration criteria in Table 1. The frequency of testing for pollutants in Table 1 is found in Section I.C.

TABLE 1

Pollutant	Ceiling Concentration (Milligrams per kilogram)*
Arsenic	75
Cadmium	85
Chromium	3000
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
PCBs	49
Selenium	100
Zinc	7500

* Dry weight basis

3. Pathogen Control

All sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site must be treated by one of the following methods to ensure that the sludge meets either the Class A, Class AB or Class B pathogen requirements.

a. For sewage sludge to be classified as Class A with respect to pathogens, the density of fecal coliform in the sewage sludge be less than 1,000 most probable number (MPN) per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met.

Alternative 1 - The temperature of the sewage sludge that is used or disposed shall be maintained at or above a specific value for a period of time. See 30 TAC § 312.82(a)(2)(A) for specific information.

Alternative 5 (PFRP) - Sewage sludge that is used or disposed of must be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in 40 CFR Part 503, Appendix B. PFRP include composting, heat drying, heat treatment, and thermophilic aerobic digestion.

Alternative 6 (PFRP Equivalent) - Sewage sludge that is used or disposed of must be treated in a process that has been approved by the U. S. Environmental Protection Agency as being equivalent to those in Alternative 5.

b. For sewage sludge to be classified as Class AB with respect to pathogens, the density of fecal coliform in the sewage sludge be less than 1,000 MPN per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met.

Alternative 2 - The pH of the sewage sludge that is used or disposed shall be raised to above 12 std. units and shall remain above 12 std. units for 72 hours.

The temperature of the sewage sludge shall be above 52° Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12 std. units.

At the end of the 72-hour period during which the pH of the sewage sludge is above 12 std. units, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50%.

Alternative 3 - The sewage sludge shall be analyzed for enteric viruses prior to pathogen treatment. The limit for enteric viruses is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(i-iii) for specific information. The sewage sludge shall be analyzed for viable helminth ova prior to pathogen treatment. The limit for viable helminth ova is less than one per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(iv-vi) for specific information.

Alternative 4 - The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed.

c. Sewage sludge that meets the requirements of Class AB sewage sludge may be classified a Class A sewage sludge if a variance request is submitted in writing that is supported by substantial documentation demonstrating equivalent methods for reducing odors and written approval is granted by the executive director. The executive director may deny the variance request or revoke that approved variance if it is determined that the variance may potentially endanger human health or the environment, or create nuisance odor conditions.

d. Three alternatives are available to demonstrate compliance with Class B criteria for

sewage sludge.

Alternative 1

i. A minimum of seven random samples of the sewage sludge shall be collected within 48 hours of the time the sewage sludge is used or disposed of during each monitoring episode for the sewage sludge.

ii. The geometric mean of the density of fecal coliform in the samples collected shall be less than either 2,000,000 MPN per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

Alternative 2 - Sewage sludge that is used or disposed of shall be treated in one of the Processes to Significantly Reduce Pathogens (PSRP) described in 40 CFR Part 503, Appendix B, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

ii. An independent Texas Licensed Professional Engineer must make a certification to the generator of a sewage sludge that the wastewater treatment facility generating the sewage sludge is designed to achieve one of the PSRP at the permitted design loading of the facility. The certification need only be repeated if the design loading of the facility is increased. The certification shall include a statement indicating the design meets all the applicable standards specified in Appendix B of 40 CFR Part 503;

iii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iv. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review; and

v. If the sewage sludge is generated from a mixture of sources, resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the PSRP, and shall meet the certification, operation, and record keeping requirements of this paragraph.

Alternative 3 - Sewage sludge shall be treated in an equivalent process that has been approved by the U.S. Environmental Protection Agency, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a

single location, except as provided in paragraph v. below;

ii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iii. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review;

iv. The Executive Director will accept from the U.S. Environmental Protection Agency a finding of equivalency to the defined PSRP; and

v. If the sewage sludge is generated from a mixture of sources resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the Processes to Significantly Reduce Pathogens, and shall meet the certification, operation, and record keeping requirements of this paragraph.

In addition, the following site restrictions must be met if Class B sludge is land applied:

i. Food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of sewage sludge.

ii. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for 4 months or longer prior to incorporation into the soil.

iii. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than 4 months prior to incorporation into the soil.

iv. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge.

v. Animals shall not be allowed to graze on the land for 30 days after application of sewage sludge.

vi. Turf grown on land where sewage sludge is applied shall not be harvested for 1 year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn.

vii. Public access to land with a high potential for public exposure shall be restricted for 1 year after application of sewage sludge.
viii. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.

ix. Land application of sludge shall be in accordance with the buffer zone requirements found in 30 TAC § 312.44.

4. Vector Attraction Reduction Requirements

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall be treated by one of the following Alternatives 1 through 10 for vector attraction reduction.

Alternative 1 - The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38%.

Alternative 2 - If Alternative 1 cannot be met for an anaerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30° and 37° Celsius. Volatile solids must be reduced by less than 17% to demonstrate compliance.

Alternative 3 - If Alternative 1 cannot be met for an aerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge with percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20° Celsius. Volatile solids must be reduced by less than 15% to demonstrate compliance.

Alternative 4 - The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20° Celsius.

Alternative 5 - Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40° Celsius and the average temperature of the sewage sludge shall be higher than 45° Celsius.

Alternative 6 - The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali shall remain at 12 or higher for two hours and then remain at a pH of 11.5 or higher for an additional 22 hours at the time the sewage sludge is prepared for sale or given away in a bag or other container.

Alternative 7 - The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75% based on the moisture content and total solids prior to mixing with other materials. Unstabilized solids are defined as organic materials in sewage sludge that have not been

treated in either an aerobic or anaerobic treatment process.

Alternative 8 - The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90% based on the moisture content and total solids prior to mixing with other materials at the time the sludge is used. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 9 -

i. Sewage sludge shall be injected below the surface of the land.

ii. No significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected.

iii. When sewage sludge that is injected below the surface of the land is Class A or Class AB with respect to pathogens, the sewage sludge shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process.

Alternative 10-

i. Sewage sludge applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land.

ii. When sewage sludge that is incorporated into the soil is Class A or Class AB with respect to pathogens, the sewage sludge shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.

C. Monitoring Requirements

Toxicity Characteristic Leaching Procedure (TCLP) Test	- once during the term of this permit
PCBs	- once during the term of this permit

All metal constituents and fecal coliform or *Salmonella* sp. bacteria shall be monitored at the appropriate frequency shown below, pursuant to 30 TAC § 312.46(a)(1):

Amount of sewage sludge (*) metric tons per 365-day period	Monitoring Frequency
0 to less than 290	Once/Year
290 to less than 1,500	Once/Quarter
1,500 to less than 15,000	Once/Two Months
15,000 or greater	Once/Month

(*) *The amount of bulk sewage sludge applied to the land (dry wt. basis).*

Representative samples of sewage sludge shall be collected and analyzed in accordance with the methods referenced in 30 TAC § 312.7

Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella sp.*, and other regulated parameters.

Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

SECTION II. REQUIREMENTS SPECIFIC TO BULK SEWAGE SLUDGE FOR APPLICATION TO THE LAND MEETING CLASS A, CLASS AB or B PATHOGEN REDUCTION AND THE CUMULATIVE LOADING RATES IN TABLE 2, OR CLASS B PATHOGEN REDUCTION AND THE POLLUTANT CONCENTRATIONS IN TABLE 3

For those permittees meeting Class A, Class AB or B pathogen reduction requirements and that meet the cumulative loading rates in Table 2 below, or the Class B pathogen reduction requirements and contain concentrations of pollutants below listed in Table 3, the following conditions apply:

A. Pollutant Limits

Table 2

Pollutant	Cumulative Pollutant Loading Rate (pounds per acre)*
Arsenic	36
Cadmium	35
Chromium	2677
Copper	1339
Lead	268
Mercury	15
Molybdenum	Report Only
Nickel	375
Selenium	89
Zinc	2500

Table 3

Pollutant	Monthly Average Concentration (milligrams per kilogram)*
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	Report Only
Nickel	420
Selenium	36
Zinc	2800

*Dry weight basis

B. Pathogen Control

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, a reclamation site, shall be treated by either Class A, Class AB or Class B pathogen reduction requirements as defined above in Section I.B.3.

C. Management Practices

1. Bulk sewage sludge shall not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other waters in the State.

2. Bulk sewage sludge not meeting Class A requirements shall be land applied in a manner which complies with Applicability in accordance with 30 TAC §312.41 and the Management Requirements in accordance with 30 TAC § 312.44.

3. Bulk sewage sludge shall be applied at or below the agronomic rate of the cover crop.

4. An information sheet shall be provided to the person who receives bulk sewage sludge sold or given away. The information sheet shall contain the following information:

   a. The name and address of the person who prepared the sewage sludge that is sold or given away in a bag or other container for application to the land.

   b. A statement that application of the sewage sludge to the land is prohibited except in accordance with the instruction on the label or information sheet.

   c. The annual whole sludge application rate for the sewage sludge application rate for the sewage sludge that does not cause any of the cumulative pollutant loading rates in Table 2 above to be exceeded, unless the pollutant concentrations in Table 3 found in Section II above are met.

D. Notification Requirements

1. If bulk sewage sludge is applied to land in a State other than Texas, written notice shall be provided prior to the initial land application to the permitting authority for the State in which the bulk sewage sludge is proposed to be applied. The notice shall include:

   a. The location, by street address, and specific latitude and longitude, of each land application site.

   b. The approximate time period bulk sewage sludge will be applied to the site.

   c. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) for the person who will apply the bulk sewage sludge.

2. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

E. Record keeping Requirements

The sludge documents will be retained at the facility site and/or shall be readily available for review by a TCEQ representative. The person who prepares bulk sewage sludge or a sewage sludge material shall develop the following information and shall retain the information at

the facility site and/or shall be readily available for review by a TCEQ representative for a period of five years. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply.

1. The concentration (mg/kg) in the sludge of each pollutant listed in Table 3 above and the applicable pollutant concentration criteria (mg/kg), or the applicable cumulative pollutant loading rate and the applicable cumulative pollutant loading rate limit (lbs/ac) listed in Table 2 above.

2. A description of how the pathogen reduction requirements are met (including site restrictions for Class AB and Class B sludge, if applicable).

3. A description of how the vector attraction reduction requirements are met.

4. A description of how the management practices listed above in Section II.C are being met.

5. The following certification statement:

   "I certify, under penalty of law, that the applicable pathogen requirements in 30 TAC § 312.82(a) or (b) and the vector attraction reduction requirements in 30 TAC § 312.83(b) have been met for each site on which bulk sewage sludge is applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices have been met. I am aware that there are significant penalties for false certification including fine and imprisonment."

6. The recommended agronomic loading rate from the references listed in Section II.C.3. above, as well as the actual agronomic loading rate shall be retained. The person who applies bulk sewage sludge or a sewage sludge material shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative indefinitely. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply:

   a. A certification statement that all applicable requirements (specifically listed) have been met, and that the permittee understands that there are significant penalties for false certification including fine and imprisonment. See 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii), as applicable, and to the permittee's specific sludge treatment activities.

   b. The location, by street address, and specific latitude and longitude, of each site on which sludge is applied.

   c. The number of acres in each site on which bulk sludge is applied.

   d. The date and time sludge is applied to each site.

e. The cumulative amount of each pollutant in pounds/acre listed in Table 2 applied to each site.

f. The total amount of sludge applied to each site in dry tons.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

F. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year the following information. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

3. Results of tests performed for pollutants found in either Table 2 or 3 as appropriate for the permittee's land application practices.

4. The frequency of monitoring listed in Section I.C. that applies to the permittee.

5. Toxicity Characteristic Leaching Procedure (TCLP) results.

6. PCB concentration in sludge in mg/kg.

7. Identity of hauler(s) and TCEQ transporter number.

8. Date(s) of transport.

9. Texas Commission on Environmental Quality registration number, if applicable.

10. Amount of sludge disposal dry weight (lbs/acre) at each disposal site.

11. The concentration (mg/kg) in the sludge of each pollutant listed in Table 1 (defined as a monthly average) as well as the applicable pollutant concentration criteria (mg/kg) listed in Table 3 above, or the applicable pollutant loading rate limit (lbs/acre) listed in Table 2 above if it exceeds 90% of the limit.

12. Level of pathogen reduction achieved (Class A, Class AB or Class B).

13. Alternative used as listed in Section I.B.3.(a. or b.). Alternatives describe how the pathogen reduction requirements are met. If Class B sludge, include information on how site restrictions were met.

14. Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella sp.*, and other regulated parameters.

15. Vector attraction reduction alternative used as listed in Section I.B.4.

16. Amount of sludge transported in dry tons/year.

17. The certification statement listed in either 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii) as applicable to the permittee's sludge treatment activities, shall be attached to the annual reporting form.

18. When the amount of any pollutant applied to the land exceeds 90% of the cumulative pollutant loading rate for that pollutant, as described in Table 2, the permittee shall report the following information as an attachment to the annual reporting form.

    a. The location, by street address, and specific latitude and longitude.

    b. The number of acres in each site on which bulk sewage sludge is applied.

    c. The date and time bulk sewage sludge is applied to each site.

    d. The cumulative amount of each pollutant (i.e., pounds/acre) listed in Table 2 in the bulk sewage sludge applied to each site.

    e. The amount of sewage sludge (i.e., dry tons) applied to each site.

    The above records shall be maintained on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION III. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE DISPOSED IN A MUNICIPAL SOLID WASTE LANDFILL

A. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC § 330 and all other applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present. The permittee shall ensure that the sewage sludge meets the requirements in 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

B. If the permittee generates sewage sludge and supplies that sewage sludge to the owner or operator of a municipal solid waste landfill (MSWLF) for disposal, the permittee shall provide to the owner or operator of the MSWLF appropriate information needed to be in compliance with the provisions of this permit.

C. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

D. Sewage sludge shall be tested once during the term of this permit in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I (Toxicity Characteristic Leaching Procedure) or other method, which receives the prior approval of the TCEQ for contaminants listed in Table 1 of 40 CFR § 261.24. Sewage sludge failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal.

Following failure of any TCLP test, the management or disposal of sewage sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division and the Regional Director (MC Region 12) of the appropriate TCEQ field office within 7 days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Registration, Review, and Reporting Division (MC 129), Texas Commission on Environmental Quality, P. O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 12) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30 of each year.

E. Sewage sludge shall be tested as needed, in accordance with the requirements of 30 TAC Chapter 330.

F. Record keeping Requirements

The permittee shall develop the following information and shall retain the information for five years.

1. The description (including procedures followed and the results) of all liquid Paint Filter Tests performed.

2. The description (including procedures followed and results) of all TCLP tests performed.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

G. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year the following information. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Toxicity Characteristic Leaching Procedure (TCLP) results.

3. Annual sludge production in dry tons/year.

4. Amount of sludge disposed in a municipal solid waste landfill in dry tons/year.

5. Amount of sludge transported interstate in dry tons/year.

6. A certification that the sewage sludge meets the requirements of 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

7. Identity of hauler(s) and transporter registration number.

8. Owner of disposal site(s).

9. Location of disposal site(s).

10. Date(s) of disposal.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION IV. REQUIREMENTS APPLYING TO SLUDGE TRANSPORTED TO ANOTHER FACILITY FOR FURTHER PROCESSING

These provisions apply to sludge that is transported to another wastewater treatment facility or facility that further processes sludge. These provisions are intended to allow transport of sludge to facilities that have been authorized to accept sludge. These provisions do not limit the ability of the receiving facility to determine whether to accept the sludge, nor do they limit the ability of the receiving facility to request additional testing or documentation.

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC Chapter 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. Sludge may only be transported using a registered transporter or using an approved pipeline.

B. Record Keeping Requirements

1. For sludge transported by an approved pipeline, the permittee must maintain records of the following:

   a. the amount of sludge transported;

   b. the date of transport;

   c. the name and TCEQ permit number of the receiving facility or facilities;

   d. the location of the receiving facility or facilities;

   e. the name and TCEQ permit number of the facility that generated the waste; and

   f. copy of the written agreement between the permittee and the receiving facility to accept sludge.

2. For sludge transported by a registered transporter, the permittee must maintain records of the completed trip tickets in accordance with 30 TAC § 312.145(a)(1)-(7) and amount of sludge transported.

3. The above records shall be maintained on-site on a monthly basis and shall be made available to the TCEQ upon request. These records shall be retained for at least five years.

C. Reporting Requirements

The permittee shall report the following information annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. the annual sludge production;

3. the amount of sludge transported;

4. the owner of each receiving facility;

5. the location of each receiving facility; and

6. the date(s) of disposal at each receiving facility.

TCEQ Revision 01/2016

OTHER REQUIREMENTS

1. The permittee shall employ or contract with one or more licensed wastewater treatment facility operators or wastewater system operations companies holding a valid license or registration according to the requirements of 30 TAC Chapter 30, Occupational Licenses and Registrations, and in particular 30 TAC Chapter 30, Subchapter J, Wastewater Operators and Operations Companies.

   This Category C facility must be operated by a chief operator or an operator holding a Category C license or higher. The facility must be operated a minimum of five days per week by the licensed chief operator or an operator holding the required level of license or higher. The licensed chief operator or operator holding the required level of license or higher must be available by telephone or pager seven days per week. Where shift operation of the wastewater treatment facility is necessary, each shift which does not have the on-site supervision of the licensed chief operator must be supervised by an operator in charge who is licensed not less than one level below the category for the facility.

2. The facility is not located in the Coastal Management Program boundary.

3. The permittee submitted evidence (on file) of legal restrictions prohibiting residential structures with the part of the buffer zone not owned by the permittee for all phases according to 30 TAC § 309.139e)(3). The permittee shall comply with the requirements of 30 TAC § 309.13 (a) through (d). (See Attachment A).

4. The permittee shall provide facilities for the protection of its wastewater treatment facility from a 100-year flood.

5. In accordance with 30 TAC § 319.9, a permittee that has at least twelve months of uninterrupted compliance with its bacteria limit may notify the commission in writing of its compliance and request a less frequent measurement schedule. To request a less frequent schedule, the permittee shall submit a written request to the TCEQ Wastewater Permitting Section (MC 148) for each phase that includes a different monitoring frequency. The request must contain all of the reported bacteria values (Daily Avg. and Daily Max/Single Grab) for the twelve consecutive months immediately prior to the request. If the Executive Director finds that a less frequent measurement schedule is protective of human health and the environment, the permittee may be given a less frequent measurement schedule. For this permit, 1/month may be reduced to 1/quarter in the Interim phase and 2/month may be reduced to 1/month in the Final phase. **A violation of any bacteria limit by a facility that has been granted a less frequent measurement schedule will require the permittee to return to the standard frequency schedule and submit written notice to the TCEQ Wastewater Permitting Section (MC 148).** The permittee may not apply for another reduction in measurement frequency for at least 24 months from the date of the last violation. The Executive Director may establish a more frequent measurement schedule if necessary to protect human health or the environment.

6. Prior to construction of the Final phase treatment facilities, the permittee shall submit to the TCEQ Wastewater Permitting Section (MC 148) a summary transmittal letter in accordance with the requirements in 30 TAC § 217.6(d). If requested by the Wastewater Permitting Section, the permittee shall submit plans, specifications, and a final engineering design report which comply with 30 TAC Chapter 217, Design Criteria for Domestic Wastewater Systems. The permittee shall clearly show how the treatment system will meet the effluent

limitations required on Page 2a of this permit. A copy of the summary transmittal letter shall be available at the plant site for inspection by authorized representatives of the TCEQ.

7. The permittee shall notify the TCEQ Regional Office (MC Region 12) and the Applications Review and Processing Team (MC 148) of the Water Quality Division, in writing at least forty-five (45) days prior to the completion of the Final phase facilities on Notification of Completion Form 20007.

CONTRIBUTING INDUSTRIES AND PRETREATMENT REQUIREMENTS

1. The following pollutants may not be introduced into the treatment facility:

   a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, waste streams with a closed-cup flash point of less than 140° Fahrenheit (60° Celsius) using the test methods specified in 40 CFR § 261.21;

   b. Pollutants which will cause corrosive structural damage to the POTW, but in no case shall there be discharges with a pH lower than 5.0 standard units, unless the works are specifically designed to accommodate such discharges;

   c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, resulting in Interference;

   d. Any pollutant, including oxygen-demanding pollutants (e.g., biological oxygen demand or BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause Interference with the POTW;

   e. Heat in amounts which will inhibit biological activity in the POTW, resulting in Interference, but in no case shall there be heat in such quantities that the temperature at the POTW treatment plant exceeds 104° Fahrenheit (40° Celsius) unless the Executive Director, upon request of the POTW, approves alternate temperature limits;

   f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through;

   g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems; and

   h. Any trucked or hauled pollutants except at discharge points designated by the POTW.

2. The permittee shall require any indirect discharger to the treatment works to comply with the reporting requirements of Sections 204(b), 307, and 308 of the Clean Water Act, including any requirements established under 40 CFR Part 403 *[rev. Federal Register/ Vol. 70/ No. 198/ Friday, October 14, 2005/ Rules and Regulations, pages 60134-60798].*

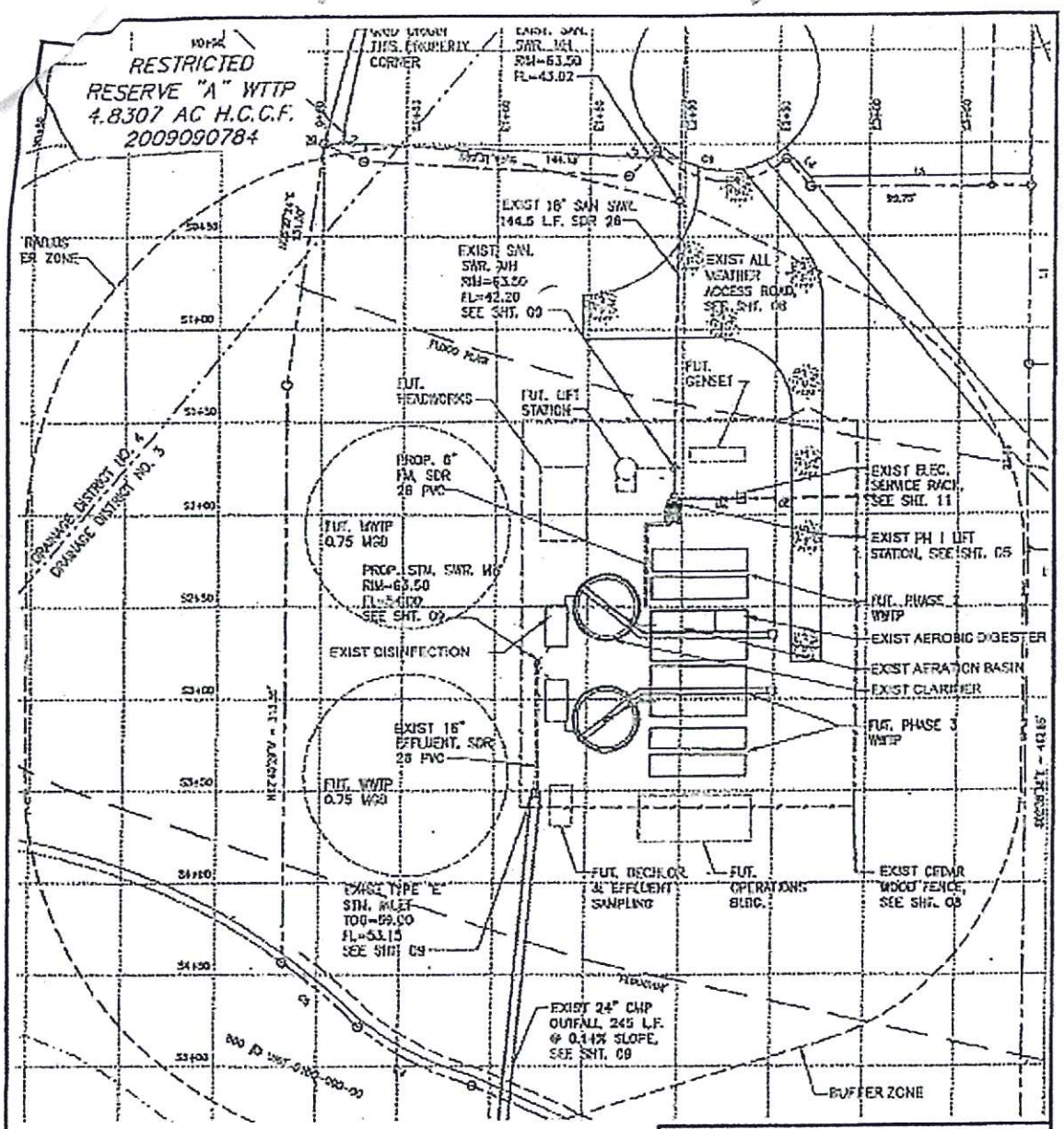
3. The permittee shall provide adequate notification to the Executive Director, care of the Wastewater Permitting Section (MC 148) of the Water Quality Division, within 30 days subsequent to the permittee's knowledge of either of the following:

   a. Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Sections 301 and 306 of the Clean Water Act if it were directly discharging those pollutants; and

   b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit.

   Any notice shall include information on the quality and quantity of effluent to be introduced into the treatment works and any anticipated impact of the change on the quality or quantity of effluent to be discharged from the POTW.

Revised July 2007



Attachment A
Sedona Lakes MUD No. 1
TPDES Permit No. WQ0014756001

SEDONA LAKES M.U.D. No. 1

BROWN & GAY ENGINEERS, INC.

Brown & Gay Engineers, Inc.
10777 Westheimer, Suite 400, Houston, TX 77042
Tel: 281-558-8700 Fax: 281-558-8751
-- Civil engineers and surveyors --
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WWTP TPDES Permit

Site Plan with Buffer Zone
Corresponds to Domestic Administrative Report 1.1, Item 2.a, Page 16 and Domestic Technical Report 1.0, Item 3.d, Page 2

DATE:	PROJECT #	EXHIBIT
June 2013	4823.3	2

TPDES PERMIT NO.
WQ0014322001
[For TCEQ office use only - EPA I.D. No. TX0124737]

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. Box 13087
Austin, Texas 78711-3087

This is a renewal that replaces TPDES Permit No. WQ0014322001 issued on July 27, 2016.

PERMIT TO DISCHARGE WASTES
under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

Brazoria County Municipal Utility District No. 25

whose mailing address is

c/o Allen, Boone, Humphries & Robinson LLP
3200 Southwest Freeway, Suite 2600
Houston, Texas 77027

is authorized to treat and discharge wastes from the Brazoria County MUD No. 25 Wastewater Treatment Facility, SIC Code 4952

located at 3451 ½ Southfork Freeway, in the City of Manvel, in Brazoria County, Texas 77578

to the American Canal in Segment No. 1100. Note, this discharge does not enter the classified segment of the San Jacinto-Brazos Coastal Basin

only according to effluent limitations, monitoring requirements, and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight, **five years from the date of issuance**.

ISSUED DATE: October 17, 2018

For the Commission

INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

1. During the period beginning upon the date of issuance and lasting through completion of expansion to the 0.75 million gallons per day (MGD) facility, the permittee is authorized to discharge subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 0.48 MGD, nor shall the average discharge during any two-hour period (2-hour peak) exceed 1,313 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg mg/l (lbs/day)	7-day Avg mg/l	Daily Max mg/l	Single Grab mg/l	Report Daily Avg. & Max Single Grab. Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	10 (40)	15	25	35	One/week	Grab
Total Suspended Solids	15 (60)	25	40	60	One/week	Grab
Ammonia Nitrogen	3 (12)	6	10	15	One/week	Grab
E. coli, colony-forming units or most probable number per 100 ml	126	N/A	399	N/A	One/month	Grab

2. The effluent shall contain a chlorine residual of at least 1.0 mg/l and shall not exceed a chlorine residual of 4.0 mg/l after a detention time of at least 20 minutes (based on peak flow), and shall be monitored five times per week by grab sample at each chlorine contact chamber. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored once per month by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location(s): Following the final treatment unit.

6. The effluent shall contain a minimum dissolved oxygen of 4.0 mg/l and shall be monitored once per week by grab sample.

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

1. During the period beginning upon completion of expansion to the 0.75 million gallons per day (MGD) facility and lasting through the date of expiration, the permittee is authorized to discharge subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 0.75 MGD, nor shall the average discharge during any two-hour period (2-hour peak) exceed 1,545 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg mg/l (lbs/day)	7-day Avg mg/l	Daily Max mg/l	Single Grab mg/l	Report Daily Avg. & Daily Max. Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	10 (63)	15	25	35	One/week	Composite
Total Suspended Solids	15 (94)	25	40	60	One/week	Composite
Ammonia Nitrogen	3 (19)	6	10	15	One/week	Composite
E. coli, colony-forming units or most probable number per 100 ml	126	N/A	399	N/A	Two/month	Grab

2. The effluent shall contain a chlorine residual of at least 1.0 mg/l and shall not exceed a chlorine residual of 4.0 mg/l after a detention time of at least 20 minutes (based on peak flow), and shall be monitored daily by grab sample at each chlorine contact chamber. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored twice per month by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location(s): Following the final treatment unit.

6. The effluent shall contain minimum dissolved oxygen of 6.0 mg/l and shall be monitored once per week by grab sample.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC § 305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§ 5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§ 361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in TWC § 26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

    a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder and limited to major domestic wastewater discharge facilities with one million gallons per day or greater permitted flow.

    b. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.

    c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.

    d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.

    e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.

    f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calendar month.

2. Concentration Measurements

    a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.

        i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.

ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.

b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.

c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.

d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the sampling day.

The daily discharge determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily discharge determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

e. Bacteria concentration (*E. coli* or Enterococci) - Colony Forming Units (CFU) or Most Probable Number (MPN) of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or, computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements made in a calendar month. For any measurement of bacteria equaling zero, a substituted value of one shall be made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.

f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD x Concentration, mg/l x 8.34).

g. Daily maximum loading (lbs/day) - the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

3. Sample Type

a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (b).

b. Grab sample - an individual sample collected in less than 15 minutes.

4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.

5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes.

6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 - 319.12. Unless otherwise specified, effluent monitoring data shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge which is described by this permit whether or not a discharge is made for that month. Monitoring results must be submitted online using the NetDMR reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. Monitoring results must be signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act (CWA); TWC §§ 26, 27, and 28; and THSC § 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§ 319.11 - 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.

b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC § 25, Environmental Testing Laboratory Accreditation and Certification.

3. Records of Results

a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR § 264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.

c. Records of monitoring activities shall include the following:

i. date, time and place of sample or measurement;

ii. identity of individual who collected the sample or made the measurement.

iii. date and time of analysis;

iv. identity of the individual and laboratory who performed the analysis;

v. the technique or method of analysis; and

vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later

than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

7. Noncompliance Notification

   a. In accordance with 30 TAC § 305.125(9) any noncompliance which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Except as allowed by 30 TAC § 305.132, report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. For Publicly Owned Treatment Works (POTWs), effective September 1, 2020, the permittee must submit the written report for unauthorized discharges and unanticipated bypasses that exceed any effluent limit in the permit using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

   b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:

      i. Unauthorized discharges as defined in Permit Condition 2(g).

      ii. Any unanticipated bypass that exceeds any effluent limitation in the permit.

      iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

   c. In addition to the above, any effluent violation which deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.

   d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.

8. In accordance with the procedures described in 30 TAC §§ 35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.

9. Changes in Discharges of Toxic Substances

   All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   i. One hundred micrograms per liter (100 µg/L);

   ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

   iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or

   iv. The level established by the TCEQ.

b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   i. Five hundred micrograms per liter (500 µg/L);

   ii. One milligram per liter (1 mg/L) for antimony;

   iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or

   iv. The level established by the TCEQ.

10. Signatories to Reports

All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).

11. All POTWs must provide adequate notice to the Executive Director of the following:

a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to CWA § 301 or § 306 if it were directly discharging those pollutants;

b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and

c. For the purpose of this paragraph, adequate notice shall include information on:

   i. The quality and quantity of effluent introduced into the POTW; and

   ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

   a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

   b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:

      i. Violation of any terms or conditions of this permit;

      ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

      iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

   c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

   a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.

   b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility.

   c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

   d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation that has a reasonable likelihood of adversely affecting human health or the environment.

   e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.

f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§ 305.62 and 305.66 and TWC§ 7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.

h. In accordance with 30 TAC § 305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility which does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.

i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under TWC §§ 7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal CWA §§ 301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA § 402, or any requirement imposed in a pretreatment program approved under the CWA §§ 402 (a)(3) or 402 (b)(8).

3. Inspections and Entry

a. Inspection and entry shall be allowed as prescribed in the TWC Chapters 26, 27, and 28, and THSC § 361.

b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in TWC § 7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment and/or Renewal

   a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:

      i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC § 305.534 (relating to New Sources and New Dischargers); or

      ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9;

      iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

   b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.

   c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.

   d. Prior to accepting or generating wastes which are not described in the permit application or which would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.

   e. In accordance with the TWC § 26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.

   f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA § 307(a) for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be

modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA § 307(a) for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

   a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.

   b. A permit may be transferred only according to the provisions of 30 TAC § 305.64 (relating to Transfer of Permits) and 30 TAC § 50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

   This permit does not authorize any activity of hazardous waste storage, processing, or disposal that requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Relationship to Water Rights

   Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to TWC Chapter 11.

8. Property Rights

   A permit does not convey any property rights of any sort, or any exclusive privilege.

9. Permit Enforceability

   The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. Relationship to Permit Application

    The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

11. Notice of Bankruptcy

    a. Each permittee shall notify the Executive Director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 Bankruptcy) of the United States Code (11 USC) by or against:

       i. the permittee;

ii. an entity (as that term is defined in 11 USC, § 101(14)) controlling the permittee or listing the permit or permittee as property of the estate; or

iii. an affiliate (as that term is defined in 11 USC, § 101(2)) of the permittee.

b. This notification must indicate:

i. the name of the permittee and the permit number(s);

ii. the bankruptcy court in which the petition for bankruptcy was filed; and

iii. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.

2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§ 319.21 - 319.29 concerning the discharge of certain hazardous metals.

3. Domestic wastewater treatment facilities shall comply with the following provisions:

a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.

b. The permittee shall submit a closure plan for review and approval to the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment and/or other treatment unit regulated by this permit.

4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, and/or retention of inadequately treated wastewater.

5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.

6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC § 7.302(b)(6).

7. Documentation

   For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC §§ 1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words confidential business information on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.

   a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility which reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

      If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 169) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.

10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.

11. Facilities that generate industrial solid waste as defined in 30 TAC § 335.1 shall comply with these provisions:

a. Any solid waste, as defined in 30 TAC § 335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.

c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC § 335.8(b)(1), to the Environmental Cleanup Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Registration, Review, and Reporting Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC § 335.5.

e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC § 335 and must include the following, as it pertains to wastewater treatment and discharge:

   i. Volume of waste and date(s) generated from treatment process;
   ii. Volume of waste disposed of on-site or shipped off-site;
   iii. Date(s) of disposal;
   iv. Identity of hauler or transporter;
   v. Location of disposal site; and
   vi. Method of final disposal.

   The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC § 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC § 361.

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SLUDGE PROVISIONS

The permittee is authorized to dispose of sludge only at a Texas Commission on Environmental Quality (TCEQ) authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge. **The disposal of sludge by land application on property owned, leased or under the direct control of the permittee is a violation of the permit unless the site is authorized with the TCEQ. This provision does not authorize Distribution and Marketing of Class A or Class AB Sewage Sludge. This provision does not authorize the permittee to land apply sludge on property owned, leased or under the direct control of the permittee.**

SECTION I. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE LAND APPLICATION

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC § 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. In all cases, if the person (permit holder) who prepares the sewage sludge supplies the sewage sludge to another person for land application use or to the owner or lease holder of the land, the permit holder shall provide necessary information to the parties who receive the sludge to assure compliance with these regulations.

3. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

B. Testing Requirements

1. Sewage sludge shall be tested once during the term of this permit in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I [Toxicity Characteristic Leaching Procedure (TCLP)] or other method that receives the prior approval of the TCEQ for the contaminants listed in 40 CFR Part 261.24, Table 1. Sewage sludge failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal. Following failure of any TCLP test, the management or disposal of sewage sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division and the Regional Director (MC Region 12) within seven (7) days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Registration, Review, and Reporting Division (MC 129), Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 12) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

2. Sewage sludge shall not be applied to the land if the concentration of the pollutants exceeds the pollutant concentration criteria in Table 1. The frequency of testing for pollutants in Table 1 is found in Section I.C.

TABLE 1

Pollutant	Ceiling Concentration (Milligrams per kilogram)*
Arsenic	75
Cadmium	85
Chromium	3000
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
PCBs	49
Selenium	100
Zinc	7500

* Dry weight basis

3. Pathogen Control

All sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site must be treated by one of the following methods to ensure that the sludge meets either the Class A, Class AB or Class B pathogen requirements.

a. For sewage sludge to be classified as Class A with respect to pathogens, the density of fecal coliform in the sewage sludge be less than 1,000 most probable number (MPN) per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met.

Alternative 1 - The temperature of the sewage sludge that is used or disposed shall be maintained at or above a specific value for a period of time. See 30 TAC § 312.82(a)(2)(A) for specific information.

Alternative 5 (PFRP) - Sewage sludge that is used or disposed of must be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in 40 CFR Part 503, Appendix B. PFRP include composting, heat drying, heat treatment, and thermophilic aerobic digestion.

Alternative 6 (PFRP Equivalent) - Sewage sludge that is used or disposed of must be treated in a process that has been approved by the U. S. Environmental Protection Agency as being equivalent to those in Alternative 5.

b. For sewage sludge to be classified as Class AB with respect to pathogens, the density of fecal coliform in the sewage sludge be less than 1,000 MPN per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met.

Alternative 2 - The pH of the sewage sludge that is used or disposed shall be raised to above 12 std. units and shall remain above 12 std. units for 72 hours.

The temperature of the sewage sludge shall be above 52° Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12 std. units.

At the end of the 72-hour period during which the pH of the sewage sludge is above 12 std. units, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50%.

Alternative 3 - The sewage sludge shall be analyzed for enteric viruses prior to pathogen treatment. The limit for enteric viruses is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(i-iii) for specific information. The sewage sludge shall be analyzed for viable helminth ova prior to pathogen treatment. The limit for viable helminth ova is less than one per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(iv-vi) for specific information.

Alternative 4 - The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed.

c. Sewage sludge that meets the requirements of Class AB sewage sludge may be classified a Class A sewage sludge if a variance request is submitted in writing that is supported by substantial documentation demonstrating equivalent methods for reducing odors and written approval is granted by the executive director. The executive director may deny the variance request or revoke that approved variance if it is determined that the variance may potentially endanger human health or the environment, or create nuisance odor conditions.

d. Three alternatives are available to demonstrate compliance with Class B criteria for

sewage sludge.

Alternative 1

i. A minimum of seven random samples of the sewage sludge shall be collected within 48 hours of the time the sewage sludge is used or disposed of during each monitoring episode for the sewage sludge.

ii. The geometric mean of the density of fecal coliform in the samples collected shall be less than either 2,000,000 MPN per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

Alternative 2 - Sewage sludge that is used or disposed of shall be treated in one of the Processes to Significantly Reduce Pathogens (PSRP) described in 40 CFR Part 503, Appendix B, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

ii. An independent Texas Licensed Professional Engineer must make a certification to the generator of a sewage sludge that the wastewater treatment facility generating the sewage sludge is designed to achieve one of the PSRP at the permitted design loading of the facility. The certification need only be repeated if the design loading of the facility is increased. The certification shall include a statement indicating the design meets all the applicable standards specified in Appendix B of 40 CFR Part 503;

iii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iv. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review; and

v. If the sewage sludge is generated from a mixture of sources, resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the PSRP, and shall meet the certification, operation, and record keeping requirements of this paragraph.

Alternative 3 - Sewage sludge shall be treated in an equivalent process that has been approved by the U.S. Environmental Protection Agency, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a

single location, except as provided in paragraph v. below;

ii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iii. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review;

iv. The Executive Director will accept from the U.S. Environmental Protection Agency a finding of equivalency to the defined PSRP; and

v. If the sewage sludge is generated from a mixture of sources resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the Processes to Significantly Reduce Pathogens, and shall meet the certification, operation, and record keeping requirements of this paragraph.

In addition, the following site restrictions must be met if Class B sludge is land applied:

i. Food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of sewage sludge.

ii. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for 4 months or longer prior to incorporation into the soil.

iii. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than 4 months prior to incorporation into the soil.

iv. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge.

v. Animals shall not be allowed to graze on the land for 30 days after application of sewage sludge.

vi. Turf grown on land where sewage sludge is applied shall not be harvested for 1 year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn.

vii. Public access to land with a high potential for public exposure shall be restricted for 1 year after application of sewage sludge.

viii. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.

ix. Land application of sludge shall be in accordance with the buffer zone requirements found in 30 TAC § 312.44.

4. Vector Attraction Reduction Requirements

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall be treated by one of the following Alternatives 1 through 10 for vector attraction reduction.

Alternative 1 - The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38%.

Alternative 2 - If Alternative 1 cannot be met for an anaerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30° and 37° Celsius. Volatile solids must be reduced by less than 17% to demonstrate compliance.

Alternative 3 - If Alternative 1 cannot be met for an aerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge with percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20° Celsius. Volatile solids must be reduced by less than 15% to demonstrate compliance.

Alternative 4 - The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20° Celsius.

Alternative 5 - Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40° Celsius and the average temperature of the sewage sludge shall be higher than 45° Celsius.

Alternative 6 - The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali shall remain at 12 or higher for two hours and then remain at a pH of 11.5 or higher for an additional 22 hours at the time the sewage sludge is prepared for sale or given away in a bag or other container.

Alternative 7 - The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75% based on the moisture content and total solids prior to mixing with other materials. Unstabilized solids are defined as organic materials in sewage sludge that have not been

treated in either an aerobic or anaerobic treatment process.

Alternative 8 - The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90% based on the moisture content and total solids prior to mixing with other materials at the time the sludge is used. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 9 - i. Sewage sludge shall be injected below the surface of the land.

ii. No significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected.

iii. When sewage sludge that is injected below the surface of the land is Class A or Class AB with respect to pathogens, the sewage sludge shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process.

Alternative 10- i. Sewage sludge applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land.

ii. When sewage sludge that is incorporated into the soil is Class A or Class AB with respect to pathogens, the sewage sludge shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.

C. Monitoring Requirements

Toxicity Characteristic Leaching Procedure (TCLP) Test	- once during the term of this permit
PCBs	- once during the term of this permit

All metal constituents and fecal coliform or *Salmonella* sp. bacteria shall be monitored at the appropriate frequency shown below, pursuant to 30 TAC § 312.46(a)(1):

Amount of sewage sludge (*) metric tons per 365-day period	Monitoring Frequency
0 to less than 290	Once/Year
290 to less than 1,500	Once/Quarter
1,500 to less than 15,000	Once/Two Months
15,000 or greater	Once/Month

(*) *The amount of bulk sewage sludge applied to the land (dry wt. basis).*

Representative samples of sewage sludge shall be collected and analyzed in accordance with the methods referenced in 30 TAC § 312.7

Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella sp.*, and other regulated parameters.

Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

SECTION II. REQUIREMENTS SPECIFIC TO BULK SEWAGE SLUDGE FOR APPLICATION TO THE LAND MEETING CLASS A, CLASS AB or B PATHOGEN REDUCTION AND THE CUMULATIVE LOADING RATES IN TABLE 2, OR CLASS B PATHOGEN REDUCTION AND THE POLLUTANT CONCENTRATIONS IN TABLE 3

For those permittees meeting Class A, Class AB or B pathogen reduction requirements and that meet the cumulative loading rates in Table 2 below, or the Class B pathogen reduction requirements and contain concentrations of pollutants below listed in Table 3, the following conditions apply:

A. Pollutant Limits

Table 2

Pollutant	Cumulative Pollutant Loading Rate (pounds per acre)*
Arsenic	36
Cadmium	35
Chromium	2677
Copper	1339
Lead	268
Mercury	15
Molybdenum	Report Only
Nickel	375
Selenium	89
Zinc	2500

Table 3

Pollutant	Monthly Average Concentration (milligrams per kilogram)*
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	Report Only
Nickel	420
Selenium	36
Zinc	2800

*Dry weight basis

B. Pathogen Control

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, a reclamation site, shall be treated by either Class A, Class AB or Class B pathogen reduction requirements as defined above in Section I.B.3.

C. Management Practices

1. Bulk sewage sludge shall not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other waters in the State.

2. Bulk sewage sludge not meeting Class A requirements shall be land applied in a manner which complies with Applicability in accordance with 30 TAC §312.41 and the Management Requirements in accordance with 30 TAC § 312.44.

3. Bulk sewage sludge shall be applied at or below the agronomic rate of the cover crop.

4. An information sheet shall be provided to the person who receives bulk sewage sludge sold or given away. The information sheet shall contain the following information:

   a. The name and address of the person who prepared the sewage sludge that is sold or given away in a bag or other container for application to the land.

   b. A statement that application of the sewage sludge to the land is prohibited except in accordance with the instruction on the label or information sheet.

   c. The annual whole sludge application rate for the sewage sludge application rate for the sewage sludge that does not cause any of the cumulative pollutant loading rates in Table 2 above to be exceeded, unless the pollutant concentrations in Table 3 found in Section II above are met.

D. Notification Requirements

1. If bulk sewage sludge is applied to land in a State other than Texas, written notice shall be provided prior to the initial land application to the permitting authority for the State in which the bulk sewage sludge is proposed to be applied. The notice shall include:

   a. The location, by street address, and specific latitude and longitude, of each land application site.

   b. The approximate time period bulk sewage sludge will be applied to the site.

   c. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) for the person who will apply the bulk sewage sludge.

2. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

E. Record keeping Requirements

The sludge documents will be retained at the facility site and/or shall be readily available for review by a TCEQ representative. The person who prepares bulk sewage sludge or a sewage sludge material shall develop the following information and shall retain the information at

the facility site and/or shall be readily available for review by a TCEQ representative for a period of five years. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply.

1. The concentration (mg/kg) in the sludge of each pollutant listed in Table 3 above and the applicable pollutant concentration criteria (mg/kg), or the applicable cumulative pollutant loading rate and the applicable cumulative pollutant loading rate limit (lbs/ac) listed in Table 2 above.

2. A description of how the pathogen reduction requirements are met (including site restrictions for Class AB and Class B sludge, if applicable).

3. A description of how the vector attraction reduction requirements are met.

4. A description of how the management practices listed above in Section II.C are being met.

5. The following certification statement:

   "I certify, under penalty of law, that the applicable pathogen requirements in 30 TAC § 312.82(a) or (b) and the vector attraction reduction requirements in 30 TAC § 312.83(b) have been met for each site on which bulk sewage sludge is applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices have been met. I am aware that there are significant penalties for false certification including fine and imprisonment."

6. The recommended agronomic loading rate from the references listed in Section II.C.3. above, as well as the actual agronomic loading rate shall be retained. The person who applies bulk sewage sludge or a sewage sludge material shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative indefinitely. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply:

   a. A certification statement that all applicable requirements (specifically listed) have been met, and that the permittee understands that there are significant penalties for false certification including fine and imprisonment. See 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii), as applicable, and to the permittee's specific sludge treatment activities.

   b. The location, by street address, and specific latitude and longitude, of each site on which sludge is applied.

   c. The number of acres in each site on which bulk sludge is applied.

   d. The date and time sludge is applied to each site.

e. The cumulative amount of each pollutant in pounds/acre listed in Table 2 applied to each site.

f. The total amount of sludge applied to each site in dry tons.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

F. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year the following information. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

3. Results of tests performed for pollutants found in either Table 2 or 3 as appropriate for the permittee's land application practices.

4. The frequency of monitoring listed in Section I.C. that applies to the permittee.

5. Toxicity Characteristic Leaching Procedure (TCLP) results.

6. PCB concentration in sludge in mg/kg.

7. Identity of hauler(s) and TCEQ transporter number.

8. Date(s) of transport.

9. Texas Commission on Environmental Quality registration number, if applicable.

10. Amount of sludge disposal dry weight (lbs/acre) at each disposal site.

11. The concentration (mg/kg) in the sludge of each pollutant listed in Table 1 (defined as a monthly average) as well as the applicable pollutant concentration criteria (mg/kg) listed in Table 3 above, or the applicable pollutant loading rate limit (lbs/acre) listed in Table 2 above if it exceeds 90% of the limit.

12. Level of pathogen reduction achieved (Class A, Class AB or Class B).

13. Alternative used as listed in Section I.B.3.(a. or b.). Alternatives describe how the pathogen reduction requirements are met. If Class B sludge, include information on how site restrictions were met.

14. Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella sp.*, and other regulated parameters.

15. Vector attraction reduction alternative used as listed in Section I.B.4.

16. Amount of sludge transported in dry tons/year.

17. The certification statement listed in either 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii) as applicable to the permittee's sludge treatment activities, shall be attached to the annual reporting form.

18. When the amount of any pollutant applied to the land exceeds 90% of the cumulative pollutant loading rate for that pollutant, as described in Table 2, the permittee shall report the following information as an attachment to the annual reporting form.

    a. The location, by street address, and specific latitude and longitude.

    b. The number of acres in each site on which bulk sewage sludge is applied.

    c. The date and time bulk sewage sludge is applied to each site.

    d. The cumulative amount of each pollutant (i.e., pounds/acre) listed in Table 2 in the bulk sewage sludge applied to each site.

    e. The amount of sewage sludge (i.e., dry tons) applied to each site.

    The above records shall be maintained on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION III. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE DISPOSED IN A MUNICIPAL SOLID WASTE LANDFILL

A. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC § 330 and all other applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present. The permittee shall ensure that the sewage sludge meets the requirements in 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

B. If the permittee generates sewage sludge and supplies that sewage sludge to the owner or operator of a municipal solid waste landfill (MSWLF) for disposal, the permittee shall provide to the owner or operator of the MSWLF appropriate information needed to be in compliance with the provisions of this permit.

C. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

D. Sewage sludge shall be tested once during the term of this permit in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I (Toxicity Characteristic Leaching Procedure) or other method, which receives the prior approval of the TCEQ for contaminants listed in Table 1 of 40 CFR § 261.24. Sewage sludge failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal.

   Following failure of any TCLP test, the management or disposal of sewage sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division and the Regional Director (MC Region 12) of the appropriate TCEQ field office within 7 days after failing the TCLP Test.

   The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Registration, Review, and Reporting Division (MC 129), Texas Commission on Environmental Quality, P. O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 12) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30 of each year.

E. Sewage sludge shall be tested as needed, in accordance with the requirements of 30 TAC Chapter 330.

F. Record keeping Requirements

   The permittee shall develop the following information and shall retain the information for five years.

1. The description (including procedures followed and the results) of all liquid Paint Filter Tests performed.

2. The description (including procedures followed and results) of all TCLP tests performed.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

G. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year the following information. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Toxicity Characteristic Leaching Procedure (TCLP) results.

3. Annual sludge production in dry tons/year.

4. Amount of sludge disposed in a municipal solid waste landfill in dry tons/year.

5. Amount of sludge transported interstate in dry tons/year.

6. A certification that the sewage sludge meets the requirements of 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

7. Identity of hauler(s) and transporter registration number.

8. Owner of disposal site(s).

9. Location of disposal site(s).

10. Date(s) of disposal.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION IV. REQUIREMENTS APPLYING TO SLUDGE TRANSPORTED TO ANOTHER FACILITY FOR FURTHER PROCESSING

These provisions apply to sludge that is transported to another wastewater treatment facility or facility that further processes sludge. These provisions are intended to allow transport of sludge to facilities that have been authorized to accept sludge. These provisions do not limit the ability of the receiving facility to determine whether to accept the sludge, nor do they limit the ability of the receiving facility to request additional testing or documentation.

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC Chapter 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. Sludge may only be transported using a registered transporter or using an approved pipeline.

B. Record Keeping Requirements

1. For sludge transported by an approved pipeline, the permittee must maintain records of the following:

   a. the amount of sludge transported;

   b. the date of transport;

   c. the name and TCEQ permit number of the receiving facility or facilities;

   d. the location of the receiving facility or facilities;

   e. the name and TCEQ permit number of the facility that generated the waste; and

   f. copy of the written agreement between the permittee and the receiving facility to accept sludge.

2. For sludge transported by a registered transporter, the permittee must maintain records of the completed trip tickets in accordance with 30 TAC § 312.145(a)(1)-(7) and amount of sludge transported.

3. The above records shall be maintained on-site on a monthly basis and shall be made available to the TCEQ upon request. These records shall be retained for at least five years.

C. Reporting Requirements

The permittee shall report the following information annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. the annual sludge production;

3. the amount of sludge transported;

4. the owner of each receiving facility;

5. the location of each receiving facility; and

6. the date(s) of disposal at each receiving facility.

TCEQ Revision 01/2016

OTHER REQUIREMENTS

1. The permittee shall employ or contract with one or more licensed wastewater treatment facility operators or wastewater system operations companies holding a valid license or registration according to the requirements of 30 TAC Chapter 30, Occupational Licenses and Registrations, and in particular 30 TAC Chapter 30, Subchapter J, Wastewater Operators and Operations Companies.

   This Category C facility must be operated by a chief operator or an operator holding a Category C license or higher. The facility must be operated a minimum of five days per week by the licensed chief operator or an operator holding the required level of license or higher. The licensed chief operator or operator holding the required level of license or higher must be available by telephone or pager seven days per week. Where shift operation of the wastewater treatment facility is necessary, each shift which does not have the on-site supervision of the licensed chief operator must be supervised by an operator in charge who is licensed not less than one level below the category for the facility.

2. The facility is not located in the Coastal Management Program boundary.

3. The permittee shall comply with the requirements of 30 TAC § 309.13(a) through (d). In addition, by ownership of the required buffer zone area, the permittee shall comply with the requirements of 30 TAC § 309.13(e).

4. The permittee shall provide facilities for the protection of its wastewater treatment facility from a 100-year flood.

5. In accordance with 30 TAC § 319.9, a permittee that has at least twelve months of uninterrupted compliance with its bacteria limit may notify the commission in writing of its compliance and request a less frequent measurement schedule. To request a less frequent schedule, the permittee shall submit a written request to the TCEQ Wastewater Permitting Section (MC 148) for each phase that includes a different monitoring frequency. The request must contain all of the reported bacteria values (Daily Avg. and Daily Max/Single Grab) for the twelve consecutive months immediately prior to the request. If the Executive Director finds that a less frequent measurement schedule is protective of human health and the environment, the permittee may be given a less frequent measurement schedule. For this permit, 1/month may be reduced to 1/quarter in the Interim phase, and 2/month may be reduced to 1/month in the Final phase. **A violation of any bacteria limit by a facility that has been granted a less frequent measurement schedule will require the permittee to return to the standard frequency schedule and submit written notice to the TCEQ Wastewater Permitting Section (MC 148).** The permittee may not apply for another reduction in measurement frequency for at least 24 months from the date of the last violation. The Executive Director may establish a more frequent measurement schedule if necessary to protect human health or the environment.

6. Within 60 days of the date of permit issuance for the Interim phase facilities, and prior to construction of the Final phase treatment facilities, the permittee shall submit to the TCEQ Wastewater Permitting Section (MC 148) a summary transmittal letter in accordance with the requirements in 30 TAC § 217.6(d). If requested by the Wastewater Permitting Section, the permittee shall submit plans, specifications, and a final engineering design report which comply with 30 TAC Chapter 217, Design Criteria for Domestic Wastewater Systems. The permittee shall clearly show how the treatment system will meet the effluent limitations

required on Page 2 and 2a of this permit. A copy of the summary transmittal letter shall be available at the plant site for inspection by authorized representatives of the TCEQ.

7. The permittee shall notify the TCEQ Regional Office (MC Region 12) and the Applications Review and Processing Team (MC 148) of the Water Quality Division, in writing at least forty-five (45) days prior to the completion of the final phase facilities on Notification of Completion Form 20007.

CONTRIBUTING INDUSTRIES AND PRETREATMENT REQUIREMENTS

1. The following pollutants may not be introduced into the treatment facility:

   a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, waste streams with a closed-cup flash point of less than 140° Fahrenheit (60° Celsius) using the test methods specified in 40 CFR § 261.21;

   b. Pollutants which will cause corrosive structural damage to the POTW, but in no case shall there be discharges with a pH lower than 5.0 standard units, unless the works are specifically designed to accommodate such discharges;

   c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, resulting in Interference;

   d. Any pollutant, including oxygen-demanding pollutants (e.g., biological oxygen demand or BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause Interference with the POTW;

   e. Heat in amounts which will inhibit biological activity in the POTW, resulting in Interference, but in no case shall there be heat in such quantities that the temperature at the POTW treatment plant exceeds 104° Fahrenheit (40° Celsius) unless the Executive Director, upon request of the POTW, approves alternate temperature limits;

   f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through;

   g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems; and

   h. Any trucked or hauled pollutants except at discharge points designated by the POTW.

2. The permittee shall require any indirect discharger to the treatment works to comply with the reporting requirements of Sections 204(b), 307, and 308 of the Clean Water Act, including any requirements established under 40 CFR Part 403 *[rev. Federal Register/ Vol. 70/ No. 198/ Friday, October 14, 2005/ Rules and Regulations, pages 60134-60798].*

3. The permittee shall provide adequate notification to the Executive Director, care of the Wastewater Permitting Section (MC 148) of the Water Quality Division, within 30 days subsequent to the permittee's knowledge of either of the following:

   a. Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Sections 301 and 306 of the Clean Water Act if it were directly discharging those pollutants; and

   b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit.

   Any notice shall include information on the quality and quantity of effluent to be introduced into the treatment works and any anticipated impact of the change on the quality or quantity of effluent to be discharged from the POTW.

Revised July 2007

TPDES PERMIT NO. WQ0014641001
[For TCEQ office use only - EPA I.D. No. TX0128163]

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. Box 13087
Austin, Texas 78711-3087

This is a renewal that replaces TPDES Permit No. WQ0014641001 issued on November 15, 2013.

PERMIT TO DISCHARGE WASTES
under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

Brazoria County Municipal Utility District No. 39

whose mailing address is

3200 Southwest Freeway, Suite 2600
Houston, Texas 77027

is authorized to treat and discharge wastes from the Brazoria County Municipal Utility District No. 39 Wastewater Treatment Facility, SIC Code 4952

located at 4554 Croix Parkway (County Road 84), in Brazoria County, Texas 77578

to Mustang Bayou; thence to Persimmon Bayou; thence to New Bayou; thence to Chocolate Bay in Segment No. 2432 of the Bays and Estuaries

only according to effluent limitations, monitoring requirements, and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight, **five years from the date of issuance**.

ISSUED DATE: January 2, 2019

For the Commission

INTERIM I EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

1. During the period beginning upon the date of issuance and lasting through the completion of expansion of the 0.25 million gallons per day (MGD) facilities, the permittee is authorized to discharge subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 0.125 MGD, nor shall the average discharge during any two-hour period (2-hour peak) exceed 347 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg mg/l (lbs/day)	7-day Avg mg/l	Daily Max mg/l	Single Grab mg/l	Report Daily Avg. & Max. Single Grab Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	10 (10)	15	25	35	One/week	Grab
Total Suspended Solids	15 (16)	25	40	60	One/week	Grab
Ammonia Nitrogen	3 (3.1)	6	10	15	One/week	Grab
E. coli, colony-forming units or most probable number per 100 ml	126	N/A	N/A	399	One/month	Grab

2. The effluent shall contain a chlorine residual of at least 1.0 mg/l and shall not exceed a chlorine residual of 4.0 mg/l after a detention time of at least 20 minutes (based on peak flow) and shall be monitored five times per week by grab sample. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored once per month by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location(s): Following the final treatment unit.

6. The effluent shall contain a minimum dissolved oxygen of 4.0 mg/l and shall be monitored once per week by grab sample.

INTERIM II EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

1. During the period beginning upon completion of expansion of the 0.25 million gallons per day (MGD) facilities and lasting through the completion of expansion of the 0.375 MGD facilities, the permittee is authorized to discharge subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 0.25 MGD, nor shall the average discharge during any two-hour period (2-hour peak) exceed 694 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg mg/l (lbs/day)	7-day Avg mg/l	Daily Max mg/l	Single Grab mg/l	Report Daily Avg. & Max. Single Grab Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	10 (21)	15	25	35	One/week	Grab
Total Suspended Solids	15 (31)	25	40	60	One/week	Grab
Ammonia Nitrogen	3 (6.3)	6	10	15	One/week	Grab
E. coli, colony-forming units or most probable number per 100 ml	126	N/A	N/A	399	One/month	Grab

2. The effluent shall contain a chlorine residual of at least 1.0 mg/l and shall not exceed a chlorine residual of 4.0 mg/l after a detention time of at least 20 minutes (based on peak flow) and shall be monitored five times per week by grab sample. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored once per month by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location(s): Following the final treatment unit.

6. The effluent shall contain a minimum dissolved oxygen of 4.0 mg/l and shall be monitored once per week by grab sample.

INTERIM III EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

1. During the period beginning upon the completion of expansion of the 0.375 million gallons per day (MGD) facilities and lasting through the completion of expansion of the 0.50 MGD facilities, the permittee is authorized to discharge subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 0.375 MGD, nor shall the average discharge during any two-hour period (2-hour peak) exceed 1,040 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg mg/l (lbs/day)	7-day Avg mg/l	Daily Max mg/l	Single Grab mg/l	Report Daily Avg. & Max. Single Grab Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	10 (31)	15	25	35	One/week	Grab
Total Suspended Solids	15 (47)	25	40	60	One/week	Grab
Ammonia Nitrogen	3 (9.4)	6	10	15	One/week	Grab
E. coli, colony-forming units or most probable number per 100 ml	126	N/A	N/A	399	One/month	Grab

2. The effluent shall contain a chlorine residual of at least 1.0 mg/l and shall not exceed a chlorine residual of 4.0 mg/l after a detention time of at least 20 minutes (based on peak flow) and shall be monitored five times per week by grab sample. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored once per month by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location(s): Following the final treatment unit.

6. The effluent shall contain a minimum dissolved oxygen of 4.0 mg/l and shall be monitored once per week by grab sample.

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

1. During the period beginning upon the completion of the 0.50 million gallons per day (MGD) facilities and lasting through the date of expiration, the permittee is authorized to discharge subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 0.50 MGD, nor shall the average discharge during any two-hour period (2-hour peak) exceed 1,390 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg mg/l (lbs/day)	7-day Avg mg/l	Daily Max mg/l	Single Grab mg/l	Report Daily Avg. & Daily Max. Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	10 (42)	15	25	35	One/week	Composite
Total Suspended Solids	15 (63)	25	40	60	One/week	Composite
Ammonia Nitrogen	3 (13)	6	10	15	One/week	Composite
E. coli, colony-forming units or most probable number per 100 ml	126	N/A	399	N/A	One/month	Grab

2. The effluent shall contain a chlorine residual of at least 1.0 mg/l and shall not exceed a chlorine residual of 4.0 mg/l after a detention time of at least 20 minutes (based on peak flow), for each treatment train and shall be monitored daily by grab sample. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored twice per month by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location(s): Following the final treatment unit.

6. The effluent shall contain minimum dissolved oxygen of 4.0 mg/l and shall be monitored once per week by grab sample.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC § 305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§ 5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§ 361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in TWC § 26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

   a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder and limited to major domestic wastewater discharge facilities with one million gallons per day or greater permitted flow.

   b. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.

   c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.

   d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.

   e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.

   f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calendar month.

2. Concentration Measurements

   a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.

      i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.

ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.

b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.

c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.

d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the sampling day.

The daily discharge determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily discharge determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

e. Bacteria concentration (*E. coli* or Enterococci) - Colony Forming Units (CFU) or Most Probable Number (MPN) of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or, computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements made in a calendar month. For any measurement of bacteria equaling zero, a substituted value of one shall be made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.

f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD x Concentration, mg/l x 8.34).

g. Daily maximum loading (lbs/day) - the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

3. Sample Type

a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (b).

b. Grab sample - an individual sample collected in less than 15 minutes.

4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.

5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes.

6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 - 319.12. Unless otherwise specified, effluent monitoring data shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge which is described by this permit whether or not a discharge is made for that month. Monitoring results must be submitted online using the NetDMR reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. Monitoring results must be signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act (CWA); TWC §§ 26, 27, and 28; and THSC § 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§ 319.11 - 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.

b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC § 25, Environmental Testing Laboratory Accreditation and Certification.

3. Records of Results

a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR § 264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.

c. Records of monitoring activities shall include the following:

i. date, time and place of sample or measurement;

ii. identity of individual who collected the sample or made the measurement.

iii. date and time of analysis;

iv. identity of the individual and laboratory who performed the analysis;

v. the technique or method of analysis; and

vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later

than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

7. Noncompliance Notification

   a. In accordance with 30 TAC § 305.125(9) any noncompliance which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Except as allowed by 30 TAC § 305.132, report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. For Publicly Owned Treatment Works (POTWs), effective September 1, 2020, the permittee must submit the written report for unauthorized discharges and unanticipated bypasses that exceed any effluent limit in the permit using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

   b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:

      i. Unauthorized discharges as defined in Permit Condition 2(g).

      ii. Any unanticipated bypass that exceeds any effluent limitation in the permit.

      iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

   c. In addition to the above, any effluent violation which deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.

   d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.

8. In accordance with the procedures described in 30 TAC §§ 35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.

9. Changes in Discharges of Toxic Substances

   All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   i. One hundred micrograms per liter (100 µg/L);

   ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

   iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or

   iv. The level established by the TCEQ.

b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   i. Five hundred micrograms per liter (500 µg/L);

   ii. One milligram per liter (1 mg/L) for antimony;

   iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or

   iv. The level established by the TCEQ.

10. Signatories to Reports

    All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).

11. All POTWs must provide adequate notice to the Executive Director of the following:

    a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to CWA § 301 or § 306 if it were directly discharging those pollutants;

    b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and

    c. For the purpose of this paragraph, adequate notice shall include information on:

       i. The quality and quantity of effluent introduced into the POTW; and

       ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

   a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

   b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:

      i. Violation of any terms or conditions of this permit;

      ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

      iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

   c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

   a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.

   b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility.

   c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

   d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation that has a reasonable likelihood of adversely affecting human health or the environment.

   e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.

f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§ 305.62 and 305.66 and TWC§ 7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.

h. In accordance with 30 TAC § 305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility which does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.

i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under TWC §§ 7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal CWA §§ 301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA § 402, or any requirement imposed in a pretreatment program approved under the CWA §§ 402 (a)(3) or 402 (b)(8).

3. Inspections and Entry

a. Inspection and entry shall be allowed as prescribed in the TWC Chapters 26, 27, and 28, and THSC § 361.

b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in TWC § 7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment and/or Renewal

   a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:

      i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC § 305.534 (relating to New Sources and New Dischargers); or

      ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9;

      iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

   b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.

   c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.

   d. Prior to accepting or generating wastes which are not described in the permit application or which would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.

   e. In accordance with the TWC § 26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.

   f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA § 307(a) for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be

modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA § 307(a) for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

   a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.

   b. A permit may be transferred only according to the provisions of 30 TAC § 305.64 (relating to Transfer of Permits) and 30 TAC § 50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

   This permit does not authorize any activity of hazardous waste storage, processing, or disposal that requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Relationship to Water Rights

   Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to TWC Chapter 11.

8. Property Rights

   A permit does not convey any property rights of any sort, or any exclusive privilege.

9. Permit Enforceability

   The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. Relationship to Permit Application

    The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

11. Notice of Bankruptcy

    a. Each permittee shall notify the Executive Director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 Bankruptcy) of the United States Code (11 USC) by or against:

       i. the permittee;

ii. an entity (as that term is defined in 11 USC, § 101(14)) controlling the permittee or listing the permit or permittee as property of the estate; or

iii. an affiliate (as that term is defined in 11 USC, § 101(2)) of the permittee.

b. This notification must indicate:

i. the name of the permittee and the permit number(s);

ii. the bankruptcy court in which the petition for bankruptcy was filed; and

iii. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.

2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§ 319.21 - 319.29 concerning the discharge of certain hazardous metals.

3. Domestic wastewater treatment facilities shall comply with the following provisions:

a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.

b. The permittee shall submit a closure plan for review and approval to the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment and/or other treatment unit regulated by this permit.

4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, and/or retention of inadequately treated wastewater.

5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.

6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC § 7.302(b)(6).

7. Documentation

   For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC §§ 1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words confidential business information on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.

   a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility which reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

      If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 219) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.

10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.

11. Facilities that generate industrial solid waste as defined in 30 TAC § 335.1 shall comply with these provisions:

a. Any solid waste, as defined in 30 TAC § 335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.

c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC § 335.8(b)(1), to the Environmental Cleanup Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Registration, Review, and Reporting Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC § 335.5.

e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC § 335 and must include the following, as it pertains to wastewater treatment and discharge:

   i. Volume of waste and date(s) generated from treatment process;
   ii. Volume of waste disposed of on-site or shipped off-site;
   iii. Date(s) of disposal;
   iv. Identity of hauler or transporter;
   v. Location of disposal site; and
   vi. Method of final disposal.

   The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC § 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC § 361.

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SLUDGE PROVISIONS

The permittee is authorized to dispose of sludge only at a Texas Commission on Environmental Quality (TCEQ) authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge. **The disposal of sludge by land application on property owned, leased or under the direct control of the permittee is a violation of the permit unless the site is authorized with the TCEQ. This provision does not authorize Distribution and Marketing of Class A or Class AB Sewage Sludge. This provision does not authorize the permittee to land apply sludge on property owned, leased or under the direct control of the permittee.**

SECTION I. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE LAND APPLICATION

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC § 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. In all cases, if the person (permit holder) who prepares the sewage sludge supplies the sewage sludge to another person for land application use or to the owner or lease holder of the land, the permit holder shall provide necessary information to the parties who receive the sludge to assure compliance with these regulations.

3. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

B. Testing Requirements

1. Sewage sludge shall be tested once during the term of this permit in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I [Toxicity Characteristic Leaching Procedure (TCLP)] or other method that receives the prior approval of the TCEQ for the contaminants listed in 40 CFR Part 261.24, Table 1. Sewage sludge failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal. Following failure of any TCLP test, the management or disposal of sewage sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division and the Regional Director (MC Region 12) within seven (7) days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Registration, Review, and Reporting Division (MC 129), Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 12) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

2. Sewage sludge shall not be applied to the land if the concentration of the pollutants exceeds the pollutant concentration criteria in Table 1. The frequency of testing for pollutants in Table 1 is found in Section I.C.

TABLE 1

Pollutant	Ceiling Concentration (Milligrams per kilogram)*
Arsenic	75
Cadmium	85
Chromium	3000
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
PCBs	49
Selenium	100
Zinc	7500

* Dry weight basis

3. Pathogen Control

All sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site must be treated by one of the following methods to ensure that the sludge meets either the Class A, Class AB or Class B pathogen requirements.

a. For sewage sludge to be classified as Class A with respect to pathogens, the density of fecal coliform in the sewage sludge be less than 1,000 most probable number (MPN) per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met.

Alternative 1 - The temperature of the sewage sludge that is used or disposed shall be maintained at or above a specific value for a period of time. See 30 TAC § 312.82(a)(2)(A) for specific information.

Alternative 5 (PFRP) - Sewage sludge that is used or disposed of must be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in 40 CFR Part 503, Appendix B. PFRP include composting, heat drying, heat treatment, and thermophilic aerobic digestion.

Alternative 6 (PFRP Equivalent) - Sewage sludge that is used or disposed of must be treated in a process that has been approved by the U. S. Environmental Protection Agency as being equivalent to those in Alternative 5.

b. For sewage sludge to be classified as Class AB with respect to pathogens, the density of fecal coliform in the sewage sludge be less than 1,000 MPN per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met.

Alternative 2 - The pH of the sewage sludge that is used or disposed shall be raised to above 12 std. units and shall remain above 12 std. units for 72 hours.

The temperature of the sewage sludge shall be above 52° Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12 std. units.

At the end of the 72-hour period during which the pH of the sewage sludge is above 12 std. units, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50%.

Alternative 3 - The sewage sludge shall be analyzed for enteric viruses prior to pathogen treatment. The limit for enteric viruses is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(i-iii) for specific information. The sewage sludge shall be analyzed for viable helminth ova prior to pathogen treatment. The limit for viable helminth ova is less than one per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(iv-vi) for specific information.

Alternative 4 - The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed.

c. Sewage sludge that meets the requirements of Class AB sewage sludge may be classified a Class A sewage sludge if a variance request is submitted in writing that is supported by substantial documentation demonstrating equivalent methods for reducing odors and written approval is granted by the executive director. The executive director may deny the variance request or revoke that approved variance if it is determined that the variance may potentially endanger human health or the environment, or create nuisance odor conditions.

d. Three alternatives are available to demonstrate compliance with Class B criteria for

sewage sludge.

Alternative 1

i. A minimum of seven random samples of the sewage sludge shall be collected within 48 hours of the time the sewage sludge is used or disposed of during each monitoring episode for the sewage sludge.

ii. The geometric mean of the density of fecal coliform in the samples collected shall be less than either 2,000,000 MPN per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

Alternative 2 - Sewage sludge that is used or disposed of shall be treated in one of the Processes to Significantly Reduce Pathogens (PSRP) described in 40 CFR Part 503, Appendix B, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

ii. An independent Texas Licensed Professional Engineer must make a certification to the generator of a sewage sludge that the wastewater treatment facility generating the sewage sludge is designed to achieve one of the PSRP at the permitted design loading of the facility. The certification need only be repeated if the design loading of the facility is increased. The certification shall include a statement indicating the design meets all the applicable standards specified in Appendix B of 40 CFR Part 503;

iii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iv. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review; and

v. If the sewage sludge is generated from a mixture of sources, resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the PSRP, and shall meet the certification, operation, and record keeping requirements of this paragraph.

Alternative 3 - Sewage sludge shall be treated in an equivalent process that has been approved by the U.S. Environmental Protection Agency, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a

single location, except as provided in paragraph v. below;

ii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iii. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review;

iv. The Executive Director will accept from the U.S. Environmental Protection Agency a finding of equivalency to the defined PSRP; and

v. If the sewage sludge is generated from a mixture of sources resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the Processes to Significantly Reduce Pathogens, and shall meet the certification, operation, and record keeping requirements of this paragraph.

In addition, the following site restrictions must be met if Class B sludge is land applied:

i. Food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of sewage sludge.

ii. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for 4 months or longer prior to incorporation into the soil.

iii. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than 4 months prior to incorporation into the soil.

iv. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge.

v. Animals shall not be allowed to graze on the land for 30 days after application of sewage sludge.

vi. Turf grown on land where sewage sludge is applied shall not be harvested for 1 year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn.

vii. Public access to land with a high potential for public exposure shall be restricted for 1 year after application of sewage sludge.

viii. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.

ix. Land application of sludge shall be in accordance with the buffer zone requirements found in 30 TAC § 312.44.

4. Vector Attraction Reduction Requirements

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall be treated by one of the following Alternatives 1 through 10 for vector attraction reduction.

Alternative 1 - The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38%.

Alternative 2 - If Alternative 1 cannot be met for an anaerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30° and 37° Celsius. Volatile solids must be reduced by less than 17% to demonstrate compliance.

Alternative 3 - If Alternative 1 cannot be met for an aerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge with percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20° Celsius. Volatile solids must be reduced by less than 15% to demonstrate compliance.

Alternative 4 - The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20° Celsius.

Alternative 5 - Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40° Celsius and the average temperature of the sewage sludge shall be higher than 45° Celsius.

Alternative 6 - The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali shall remain at 12 or higher for two hours and then remain at a pH of 11.5 or higher for an additional 22 hours at the time the sewage sludge is prepared for sale or given away in a bag or other container.

Alternative 7 - The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75% based on the moisture content and total solids prior to mixing with other materials. Unstabilized solids are defined as organic materials in sewage sludge that have not been

treated in either an aerobic or anaerobic treatment process.

Alternative 8 - The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90% based on the moisture content and total solids prior to mixing with other materials at the time the sludge is used. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 9 -

i. Sewage sludge shall be injected below the surface of the land.

ii. No significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected.

iii. When sewage sludge that is injected below the surface of the land is Class A or Class AB with respect to pathogens, the sewage sludge shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process.

Alternative 10-

i. Sewage sludge applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land.

ii. When sewage sludge that is incorporated into the soil is Class A or Class AB with respect to pathogens, the sewage sludge shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.

C. Monitoring Requirements

Toxicity Characteristic Leaching Procedure (TCLP) Test	- once during the term of this permit
PCBs	- once during the term of this permit

All metal constituents and fecal coliform or *Salmonella* sp. bacteria shall be monitored at the appropriate frequency shown below, pursuant to 30 TAC § 312.46(a)(1):

Amount of sewage sludge (*) metric tons per 365-day period	Monitoring Frequency
0 to less than 290	Once/Year
290 to less than 1,500	Once/Quarter
1,500 to less than 15,000	Once/Two Months
15,000 or greater	Once/Month

(*) *The amount of bulk sewage sludge applied to the land (dry wt. basis).*

Representative samples of sewage sludge shall be collected and analyzed in accordance with the methods referenced in 30 TAC § 312.7

Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella sp.*, and other regulated parameters.

Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

SECTION II. REQUIREMENTS SPECIFIC TO BULK SEWAGE SLUDGE FOR APPLICATION TO THE LAND MEETING CLASS A, CLASS AB or B PATHOGEN REDUCTION AND THE CUMULATIVE LOADING RATES IN TABLE 2, OR CLASS B PATHOGEN REDUCTION AND THE POLLUTANT CONCENTRATIONS IN TABLE 3

For those permittees meeting Class A, Class AB or B pathogen reduction requirements and that meet the cumulative loading rates in Table 2 below, or the Class B pathogen reduction requirements and contain concentrations of pollutants below listed in Table 3, the following conditions apply:

A. Pollutant Limits

Table 2

Pollutant	Cumulative Pollutant Loading Rate (pounds per acre)*
Arsenic	36
Cadmium	35
Chromium	2677
Copper	1339
Lead	268
Mercury	15
Molybdenum	Report Only
Nickel	375
Selenium	89
Zinc	2500

Table 3

Pollutant	Monthly Average Concentration (milligrams per kilogram)*
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	Report Only
Nickel	420
Selenium	36
Zinc	2800

*Dry weight basis

B. Pathogen Control

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, a reclamation site, shall be treated by either Class A, Class AB or Class B pathogen reduction requirements as defined above in Section I.B.3.

C. Management Practices

1. Bulk sewage sludge shall not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other waters in the State.

2. Bulk sewage sludge not meeting Class A requirements shall be land applied in a manner which complies with Applicability in accordance with 30 TAC §312.41 and the Management Requirements in accordance with 30 TAC § 312.44.

3. Bulk sewage sludge shall be applied at or below the agronomic rate of the cover crop.

4. An information sheet shall be provided to the person who receives bulk sewage sludge sold or given away. The information sheet shall contain the following information:

   a. The name and address of the person who prepared the sewage sludge that is sold or given away in a bag or other container for application to the land.

   b. A statement that application of the sewage sludge to the land is prohibited except in accordance with the instruction on the label or information sheet.

   c. The annual whole sludge application rate for the sewage sludge application rate for the sewage sludge that does not cause any of the cumulative pollutant loading rates in Table 2 above to be exceeded, unless the pollutant concentrations in Table 3 found in Section II above are met.

D. Notification Requirements

1. If bulk sewage sludge is applied to land in a State other than Texas, written notice shall be provided prior to the initial land application to the permitting authority for the State in which the bulk sewage sludge is proposed to be applied. The notice shall include:

   a. The location, by street address, and specific latitude and longitude, of each land application site.

   b. The approximate time period bulk sewage sludge will be applied to the site.

   c. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) for the person who will apply the bulk sewage sludge.

2. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

E. Record keeping Requirements

The sludge documents will be retained at the facility site and/or shall be readily available for review by a TCEQ representative. The person who prepares bulk sewage sludge or a sewage sludge material shall develop the following information and shall retain the information at

the facility site and/or shall be readily available for review by a TCEQ representative for a period of five years. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply.

1. The concentration (mg/kg) in the sludge of each pollutant listed in Table 3 above and the applicable pollutant concentration criteria (mg/kg), or the applicable cumulative pollutant loading rate and the applicable cumulative pollutant loading rate limit (lbs/ac) listed in Table 2 above.

2. A description of how the pathogen reduction requirements are met (including site restrictions for Class AB and Class B sludge, if applicable).

3. A description of how the vector attraction reduction requirements are met.

4. A description of how the management practices listed above in Section II.C are being met.

5. The following certification statement:

   "I certify, under penalty of law, that the applicable pathogen requirements in 30 TAC § 312.82(a) or (b) and the vector attraction reduction requirements in 30 TAC § 312.83(b) have been met for each site on which bulk sewage sludge is applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices have been met. I am aware that there are significant penalties for false certification including fine and imprisonment."

6. The recommended agronomic loading rate from the references listed in Section II.C.3. above, as well as the actual agronomic loading rate shall be retained. The person who applies bulk sewage sludge or a sewage sludge material shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative indefinitely. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply:

   a. A certification statement that all applicable requirements (specifically listed) have been met, and that the permittee understands that there are significant penalties for false certification including fine and imprisonment. See 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii), as applicable, and to the permittee's specific sludge treatment activities.

   b. The location, by street address, and specific latitude and longitude, of each site on which sludge is applied.

   c. The number of acres in each site on which bulk sludge is applied.

   d. The date and time sludge is applied to each site.

e. The cumulative amount of each pollutant in pounds/acre listed in Table 2 applied to each site.

f. The total amount of sludge applied to each site in dry tons.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

F. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year the following information. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

3. Results of tests performed for pollutants found in either Table 2 or 3 as appropriate for the permittee's land application practices.

4. The frequency of monitoring listed in Section I.C. that applies to the permittee.

5. Toxicity Characteristic Leaching Procedure (TCLP) results.

6. PCB concentration in sludge in mg/kg.

7. Identity of hauler(s) and TCEQ transporter number.

8. Date(s) of transport.

9. Texas Commission on Environmental Quality registration number, if applicable.

10. Amount of sludge disposal dry weight (lbs/acre) at each disposal site.

11. The concentration (mg/kg) in the sludge of each pollutant listed in Table 1 (defined as a monthly average) as well as the applicable pollutant concentration criteria (mg/kg) listed in Table 3 above, or the applicable pollutant loading rate limit (lbs/acre) listed in Table 2 above if it exceeds 90% of the limit.

12. Level of pathogen reduction achieved (Class A, Class AB or Class B).

13. Alternative used as listed in Section I.B.3.(a. or b.). Alternatives describe how the pathogen reduction requirements are met. If Class B sludge, include information on how site restrictions were met.

14. Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella sp.*, and other regulated parameters.

15. Vector attraction reduction alternative used as listed in Section I.B.4.

16. Amount of sludge transported in dry tons/year.

17. The certification statement listed in either 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii) as applicable to the permittee's sludge treatment activities, shall be attached to the annual reporting form.

18. When the amount of any pollutant applied to the land exceeds 90% of the cumulative pollutant loading rate for that pollutant, as described in Table 2, the permittee shall report the following information as an attachment to the annual reporting form.

    a. The location, by street address, and specific latitude and longitude.

    b. The number of acres in each site on which bulk sewage sludge is applied.

    c. The date and time bulk sewage sludge is applied to each site.

    d. The cumulative amount of each pollutant (i.e., pounds/acre) listed in Table 2 in the bulk sewage sludge applied to each site.

    e. The amount of sewage sludge (i.e., dry tons) applied to each site.

    The above records shall be maintained on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION III. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE DISPOSED IN A MUNICIPAL SOLID WASTE LANDFILL

A. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC § 330 and all other applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present. The permittee shall ensure that the sewage sludge meets the requirements in 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

B. If the permittee generates sewage sludge and supplies that sewage sludge to the owner or operator of a municipal solid waste landfill (MSWLF) for disposal, the permittee shall provide to the owner or operator of the MSWLF appropriate information needed to be in compliance with the provisions of this permit.

C. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

D. Sewage sludge shall be tested once during the term of this permit in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I (Toxicity Characteristic Leaching Procedure) or other method, which receives the prior approval of the TCEQ for contaminants listed in Table 1 of 40 CFR § 261.24. Sewage sludge failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal.

   Following failure of any TCLP test, the management or disposal of sewage sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division and the Regional Director (MC Region 12) of the appropriate TCEQ field office within 7 days after failing the TCLP Test.

   The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Registration, Review, and Reporting Division (MC 129), Texas Commission on Environmental Quality, P. O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 12) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30 of each year.

E. Sewage sludge shall be tested as needed, in accordance with the requirements of 30 TAC Chapter 330.

F. Record keeping Requirements

   The permittee shall develop the following information and shall retain the information for five years.

1. The description (including procedures followed and the results) of all liquid Paint Filter Tests performed.

2. The description (including procedures followed and results) of all TCLP tests performed.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

G. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year the following information. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Toxicity Characteristic Leaching Procedure (TCLP) results.

3. Annual sludge production in dry tons/year.

4. Amount of sludge disposed in a municipal solid waste landfill in dry tons/year.

5. Amount of sludge transported interstate in dry tons/year.

6. A certification that the sewage sludge meets the requirements of 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

7. Identity of hauler(s) and transporter registration number.

8. Owner of disposal site(s).

9. Location of disposal site(s).

10. Date(s) of disposal.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION IV. REQUIREMENTS APPLYING TO SLUDGE TRANSPORTED TO ANOTHER FACILITY FOR FURTHER PROCESSING

These provisions apply to sludge that is transported to another wastewater treatment facility or facility that further processes sludge. These provisions are intended to allow transport of sludge to facilities that have been authorized to accept sludge. These provisions do not limit the ability of the receiving facility to determine whether to accept the sludge, nor do they limit the ability of the receiving facility to request additional testing or documentation.

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC Chapter 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. Sludge may only be transported using a registered transporter or using an approved pipeline.

B. Record Keeping Requirements

1. For sludge transported by an approved pipeline, the permittee must maintain records of the following:

   a. the amount of sludge transported;

   b. the date of transport;

   c. the name and TCEQ permit number of the receiving facility or facilities;

   d. the location of the receiving facility or facilities;

   e. the name and TCEQ permit number of the facility that generated the waste; and

   f. copy of the written agreement between the permittee and the receiving facility to accept sludge.

2. For sludge transported by a registered transporter, the permittee must maintain records of the completed trip tickets in accordance with 30 TAC § 312.145(a)(1)-(7) and amount of sludge transported.

3. The above records shall be maintained on-site on a monthly basis and shall be made available to the TCEQ upon request. These records shall be retained for at least five years.

C. Reporting Requirements

The permittee shall report the following information annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (*e.g.*, sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (*e.g.*, beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (*e.g.*, centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. the annual sludge production;

3. the amount of sludge transported;

4. the owner of each receiving facility;

5. the location of each receiving facility; and

6. the date(s) of disposal at each receiving facility.

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OTHER REQUIREMENTS

1. The permittee shall employ or contract with one or more licensed wastewater treatment facility operators or wastewater system operations companies holding a valid license or registration according to the requirements of 30 TAC Chapter 30, Occupational Licenses and Registrations, and in particular 30 TAC Chapter 30, Subchapter J, Wastewater Operators and Operations Companies.

   This Category C facility must be operated by a chief operator or an operator holding a Category C license or higher. The facility must be operated a minimum of five days per week by the licensed chief operator or an operator holding the required level of license or higher. The licensed chief operator or operator holding the required level of license or higher must be available by telephone or pager seven days per week. Where shift operation of the wastewater treatment facility is necessary, each shift which does not have the on-site supervision of the licensed chief operator must be supervised by an operator in charge who is licensed not less than one level below the category for the facility.

2. The facility is not located in the Coastal Management Program boundary.

3. The permittee shall comply with the requirements of 30 TAC § 309.13(a) through (d). In addition, by ownership of the required buffer zone area, the permittee shall comply with the requirements of 30 TAC § 309.13(e).

4. The permittee shall provide facilities for the protection of its wastewater treatment facility from a 100-year flood.

5. In accordance with 30 TAC § 319.9, a permittee that has at least twelve months of uninterrupted compliance with its bacteria limit may notify the commission in writing of its compliance and request a less frequent measurement schedule. To request a less frequent schedule, the permittee shall submit a written request to the TCEQ Wastewater Permitting Section (MC 148) for each phase that includes a different monitoring frequency. The request must contain all of the reported bacteria values (Daily Avg. and Daily Max/Single Grab) for the twelve consecutive months immediately prior to the request. If the Executive Director finds that a less frequent measurement schedule is protective of human health and the environment, the permittee may be given a less frequent measurement schedule. For this permit, 1/month may be reduced to 1/quarter in the Interim I, I III and Final phases. **A violation of any bacteria limit by a facility that has been granted a less frequent measurement schedule will require the permittee to return to the standard frequency schedule and submit written notice to the TCEQ Wastewater Permitting Section (MC 148).** The permittee may not apply for another reduction in measurement frequency for at least 24 months from the date of the last violation. The Executive Director may establish a more frequent measurement schedule if necessary to protect human health or the environment.

6. Prior to construction of the Interim II, III and Final phases of treatment facilities, the permittee shall submit to the TCEQ Wastewater Permitting Section (MC 148) a summary transmittal letter in accordance with the requirements in 30 TAC § 217.6(d). If requested by the Wastewater Permitting Section, the permittee shall submit plans, specifications, and a final engineering design report which comply with 30 TAC Chapter 217, Design Criteria for Domestic Wastewater Systems. The permittee shall clearly show how the treatment system will meet the effluent limitations required on Page 2a, 2b and 2c of this permit. A copy of

the summary transmittal letter shall be available at the plant site for inspection by authorized representatives of the TCEQ.

7. The permittee shall notify the TCEQ Regional Office (MC Region 12) and the Applications Review and Processing Team (MC 148) of the Water Quality Division, in writing at least forty-five (45) days prior to the completion of the Interim II, III, and Final phases facilities on Notification of Completion Form 20007.

CONTRIBUTING INDUSTRIES AND PRETREATMENT REQUIREMENTS

1. The following pollutants may not be introduced into the treatment facility:

   a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, waste streams with a closed-cup flash point of less than 140° Fahrenheit (60° Celsius) using the test methods specified in 40 CFR § 261.21;

   b. Pollutants which will cause corrosive structural damage to the POTW, but in no case shall there be discharges with a pH lower than 5.0 standard units, unless the works are specifically designed to accommodate such discharges;

   c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, resulting in Interference;

   d. Any pollutant, including oxygen-demanding pollutants (e.g., biochemical oxygen demand or BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause Interference with the POTW;

   e. Heat in amounts which will inhibit biological activity in the POTW, resulting in Interference, but in no case shall there be heat in such quantities that the temperature at the POTW treatment plant exceeds 104° Fahrenheit (40° Celsius) unless the Executive Director, upon request of the POTW, approves alternate temperature limits;

   f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through;

   g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems; and

   h. Any trucked or hauled pollutants except at discharge points designated by the POTW.

2. The permittee shall require any indirect discharger to the treatment works to comply with the reporting requirements of Sections 204(b), 307, and 308 of the Clean Water Act, including any requirements established under 40 CFR Part 403 *[rev. Federal Register/ Vol. 70/ No. 198/ Friday, October 14, 2005/ Rules and Regulations, pages 60134-60798].*

3. The permittee shall provide adequate notification to the Executive Director, care of the Wastewater Permitting Section (MC 148) of the Water Quality Division, within 30 days subsequent to the permittee's knowledge of either of the following:

   a. Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Sections 301 and 306 of the Clean Water Act if it were directly discharging those pollutants; and

   b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit.

   Any notice shall include information on the quality and quantity of effluent to be introduced into the treatment works and any anticipated impact of the change on the quality or quantity of effluent to be discharged from the POTW.

Revised July 2007

APPENDIX D
TCEQ Chapter 210 and Chapter 344

SUBCHAPTER B : GENERAL REQUIREMENTS FOR THE PRODUCTION, CONVEYANCE, AND USE OF RECLAIMED WATER
§§210.21 - 210.25

§210.21. Applicability.

This subchapter establishes general requirements applicable to producers, providers, and users of reclaimed water. This subchapter also establishes requirements and specifications for transfer, storage, and irrigation using reclaimed water and design criteria of reclaimed water systems. Additionally, this subchapter establishes requirements and specifications necessary to minimize discharges of waste into or adjacent to waters in the state.

Adopted January 8, 1997 Effective February 12, 1997

§210.22. General Requirements.

(a) Reuse of untreated wastewater is prohibited.

(b) Food crops that may be consumed raw by humans shall not be spray irrigated. Food crops including orchard crops that will be substantially processed prior to human consumption may be spray irrigated. Other types of irrigation that avoid contact of reclaimed water with edible portions of food crops are acceptable.

(c) There shall be no nuisance conditions resulting from the distribution, the use, and/or storage of reclaimed water.

(d) Reclaimed water shall not be utilized in a way that degrades ground water quality to a degree adversely affecting its actual or potential uses.

(e) Reclaimed water managed in ponds for storage must be prevented from discharge into waters in the state, except for discharges directly resulting from rainfall events or in accordance with a permit issued by the commission. All other discharges are unauthorized. If any unauthorized overflow of a holding pond occurs causing discharge into or adjacent to waters in the state, the user or provider, as appropriate, shall report the noncompliance. A written submission of such information shall also be provided to the TNRCC regional office and to the Austin Office, Water Enforcement Section (MC-149), within five (5) working days of becoming aware of the overflow. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the anticipated time it is expected to continue; and, steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

Adopted January 8, 1997 Effective February 12, 1997

§210.23. Storage Requirements for Reclaimed Water.

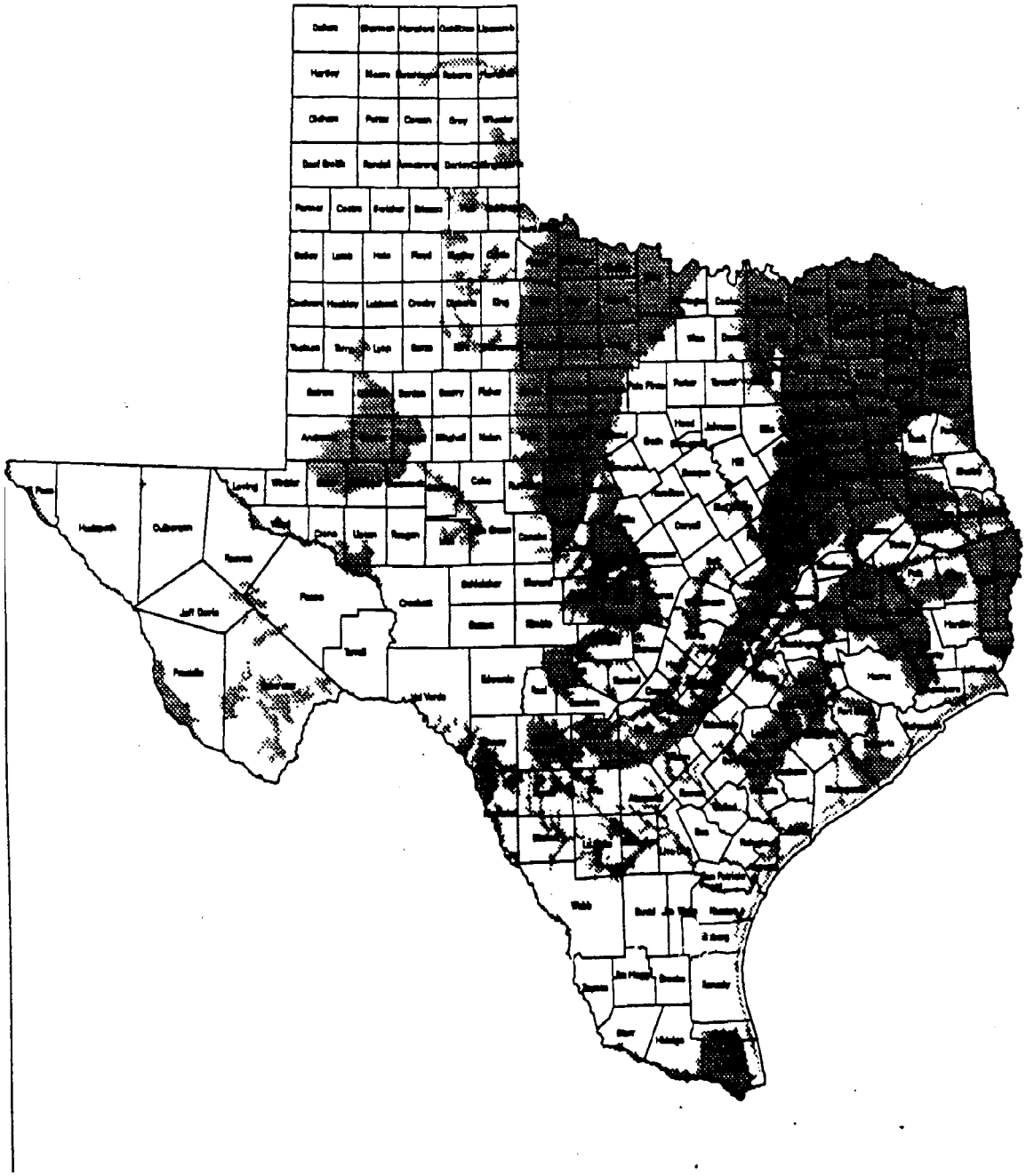
(a) Except for authorized on-channel ponds, storage facilities for retaining reclaimed water prior to use shall not be located within the floodway.

(b) Except as provided by subsection (e) of this section, all initial holding ponds must be lined in accordance with either subsection (c) or (d) of this section, as appropriate.

(c) All initial and subsequent holding ponds containing Type I and Type II effluent, located within the recharge zone of the Edwards Aquifer, as defined in Chapter 213 of this title (relating to Edwards Aquifer), and all initial holding ponds containing Type II effluent, located in a vulnerable area as defined by a rating of 110 or greater on the statewide "*Ground-Water Pollution Potential - General, Municipal, and Industrial Sources*" (DRASTIC) map (as shown in Figure 1 of this chapter), shall conform to the following requirements: (Figure 1: 30 TAC §210.23(c)).

FIGURE 1: 30 TAC §210.23(c)

DRASTIC Pollution Potential Index of 110 or Greater



(1) The ponds, whether constructed of earthen or other impervious material, shall be designed and constructed so as to prevent groundwater contamination;

(2) Soils used for pond lining shall be free from foreign material such as paper, brush, trees, and large rocks;

(3) All soil liners must be of compacted material, at least 24 inches thick, compacted in lifts no greater than 6 inches thick and compacted to 95% of Standard Proctor Density. In-situ clay soils meeting the soils liner requirements shall be excavated and re-compacted a minimum of 6 inches below planned grade to assure a uniformly compacted finished surface.

(4) Soil liners must meet the following particle size gradation and Atterberg limits:

(A) 30% or more passing a number 200 mesh sieve; and

(B) a liquid limit of 30% or greater; and a plasticity index of 15 or greater and have a permeability less than or equal to 1×10^{-7} cm/sec;

(5) Synthetic membrane linings shall have a minimum thickness of 40 mils with a leak detection system. In situ liners at least 24 inches thick meeting a permeability less than or equal to 1×10^{-7} cm/sec are acceptable alternatives;

(6) Certification shall be furnished by a Texas Registered Professional Engineer that the pond lining meets the appropriate criteria prior to utilization of the facilities; and

(7) Soil embankment walls shall have a top width of at least five feet. The interior and exterior slopes of soil embankment walls shall be no steeper than one foot vertical to three feet horizontal unless alternate methods of slope stabilization are utilized. All soil embankment walls shall be protected by a vegetative cover or other stabilizing material to prevent erosion. Erosion stops and water seals shall be installed on all piping penetrating the embankments.

(d) All initial holding ponds designed to contain Type I effluent, located outside of the recharge zone of the Edwards Aquifer, and Type II effluent, located in areas in the state not identified in subsection (c) of this section shall conform to the following requirements:

(1) The ponds, whether constructed of earthen or other impervious materials, shall be designed and constructed so as to prevent groundwater contamination;

(2) Soils used for pond lining shall be free from foreign material such as paper, brush, trees, and large rocks;

(3) All soil liners must be of compacted material having a permeability less than or equal to 1×10^{-4} cm/sec, at least 24 inches thick, compacted in lifts no greater than 6 inches each;

(4) Synthetic membrane linings shall have a minimum thickness of 40 mils. In situ liners at least 24 inches thick meeting a permeability less than or equal to 1×10^{-4} cm/sec are acceptable alternatives;

(5) Certification shall be furnished by a Texas Registered Professional Engineer that the pond lining meets the appropriate criteria prior to utilization of the facilities; and

(6) Soil embankment walls shall have a top width of at least five feet. The interior and exterior slopes of soil embankment walls shall be no steeper than one foot vertical to three feet horizontal unless alternate methods of slope stabilization are utilized. All soil embankment walls shall be protected by a vegetative cover or other stabilizing material to prevent erosion. Erosion stops and water seals shall be installed on all piping penetrating the embankments.

(7) An alternative method of pond lining which provides equivalent or better water quality protection than provided under this section may be utilized with the prior approval of the executive director.

(8) A specific exemption may be obtained from the executive director if, after the review of data submitted by the reclaimed water provider or user, as appropriate, the executive director determines containment of the reclaimed water is not necessary, considering:

(A) soil and geologic data, and ground water data, including its quality, uses, quantity and yield; and

(B) adequate demonstration that impairment of ground water for its actual or potential use will be prevented.

(e) Reclaimed water may be stored in leak-proof, fabricated tanks.

(f) Subsequent holding ponds utilized for the receipt and storage of reclaimed water of a quality that could cause or causes a violation of a surface water quality standard or impairment of ground water for its actual or intended use will also be subject to the storage requirements of this section.

Adopted January 8, 1997 Effective February 12, 1997

§210.24. Irrigation Using Reclaimed Water.

(a) The reclaimed water user shall provide reasonable control of the application rates for reclaimed water applied to irrigation areas. These controls shall encourage the efficient use of reclaimed water and avoid excessive application of reclaimed water that results in surface runoff or excessive percolation below the root zone.

(b) The reclaimed water provider or user, as applicable shall determine and document typical irrigation demands for the proposed use based on type of vegetation and land area to be irrigated. As one alternative, a typical method for determining irrigation needs is shown in Table 1 of this section. However, other alternative methods may be used. (Figure 1: 30 TAC §210.24(b))

FIGURE 1: 30 TAC §210.24(b)

TABLE 1
WATER BALANCE EXAMPLE
(All Units are Inches of Water per Acre of Irrigated Area)

Month (1)	a Average Precipitation (2)	b Average Runoff (3)	Ri Average Infiltrated Rainfall (4)	c Evapotranspiration (5)	d Required Leaching (6)	Total Water Needs (5)+(6) (7)	Effluent Needed in Root Zone (7)-(4) (8)	e Evaporation from Reservoir Surface (9)	f Effluent to be Applied to Land (8)/K (10)	g Consumption from Reservoir (9)+(10) (11)
Jan.	2.11	0.40	1.71	0.80	0.00	0.80	0.00	0.02	0.00	0.02
Feb.	2.43	0.57	1.86	1.20	0.00	1.20	0.00	0.01	0.00	0.01
Mar.	2.02	0.36	1.66	2.80	0.20	3.00	1.34	0.09	1.58	1.67
Apr.	3.19	1.03	2.16	3.40	0.22	3.62	1.46	0.05	1.72	1.77
May	4.19	1.74	2.45	6.10	0.64	6.74	4.29	0.10	5.05	5.15
June	3.30	1.10	2.20	6.50	0.76	7.26	5.06	0.20	5.95	6.15
July	2.20	0.45	1.75	6.70	0.87	7.57	5.82	0.34	6.85	7.19
Aug.	2.12	0.41	1.71	4.60	0.51	5.11	3.40	0.34	4.00	4.34
Sept.	3.58	1.30	2.28	5.10	0.50	5.60	3.32	0.19	3.91	4.10
Oct.	3.09	0.96	2.13	4.10	0.35	4.45	2.32	0.14	2.73	2.87
Nov.	2.23	0.46	1.77	2.10	0.06	2.16	0.39	0.07	0.46	0.53
Dec.	2.34	0.52	1.82	1.00	0.00	1.00	0.00	0.03	0.00	0.03
	32.80	9.30	23.50	44.40	4.11	48.51	27.40	1.58	32.25	33.83

Table 1 Footnotes

a. Up-to date rainfall and evaporation data sets are available from the Texas Natural Resources Information System.

b. Runoff should be determined by an acceptable method such as the Soil Conservation Service method found in SCS Technical Releases No. 55. For calculation purposes only, a CN value of 74 was assumed for good pasture with Class "C" soils.

c. Suggested source of values is the "Bulletin 6019, Consumptive Use of Water by Major Crops in Texas", Texas Board of Water Engineers.

d. In low rainfall areas, this is the required leaching to avoid salinity build-up in the soil where:

$$L = \frac{Ce}{C1-Ce} \quad (E - Ri)$$

Ri = Infiltrated rainfall

Ce = Electrical conductivity of effluent

C1 = Maximum Allowable Conductivity of Soil Solution (Table 3)

E = Evapotranspiration

For calculation purposes only, Ce is measured to be 1.5 millimhos/cm @ 25 ^{o} and C1 is 10.0 (Bermuda Grass)

e. Net evaporation from reservoir surface. For the purpose of calculation, an assumption must be made as to the ratio of irrigated land area to reservoir surface area. For this example problem, the necessary reservoir area was assumed to be 17% of the irrigated area. If, after all calculations are made, the reservoir dimensions do not seem reasonable, then a new assumption must be made and the calculations repeated. Values in column (9) are adjusted to be inches per irrigated acre.

f. K is the irrigation efficiency which for this example is taken to be 0.85.

g. The total of this column together with the expected annual volume of effluent will determine the acreage of irrigated land required.

(c) The reclaimed water provider shall be responsible for conducting periodic audits of appropriate controls implemented by reclaimed water users. Other typical irrigation operational considerations that must be addressed include the following:

(1) Irrigation of Food Crops.

(A) Irrigation of edible crops that will be peeled, skinned, cooked, or thermally processed before consumption is allowed. Direct contact of the reclaimed water with such crops is allowed.

(B) Irrigation of citrus fruit is allowed. Direct contact of the reclaimed water with citrus is allowed.

(C) Irrigation of edible crops that will not be peeled, skinned, cooked, or thermally processed before consumption is allowed if an indirect application method is used which will preclude the direct contact with the reclaimed water. For instance, a ridge and furrow, drip irrigation, or a subsurface distribution system may be used to irrigate such above ground crops. However, these methods would not be suitable for crops such as carrots or radishes.

(D) Irrigation of edible crops that will not be peeled, skinned, cooked, or thermally processed before consumption that allows for direct contact of the reclaimed water on the crop is prohibited.

(2) Irrigation of pastures used by animals milked for human consumption shall be conducted in a manner to avoid contact of reclaimed water with such animals.

(3) Irrigation of landscaped areas:

(A) Application of reclaimed water on public access facilities shall be controlled by agreement with the reclaimed water provider or by local ordinance.

(B) Reclaimed water may not be used to fill swimming pools, hot tubs, wading pools, or other structures designed for contact recreation.

(d) General irrigation requirements.

(1) A provider or user designing or operating an irrigation system using reclaimed water is responsible for ensuring that reclaimed water overflow, crop stress, and undesirable soil contamination by a salt does not occur. To prevent such occurrences, the provider or user is required to consider, evaluate, and respond appropriately to the following factors as the need arises:

(A) Precipitation inputs to the water balance should utilize the average monthly precipitation based on past rainfall records.

(B) The consumptive use requirements (evapotranspiration losses) of the crop system should be developed on a monthly basis. The method of determining the consumptive use requirement shall be documented by the provider or user as a part of the water balance study and the records of the study maintained for possible commission review.

(C) A leaching requirement, calculated as shown in Table 1 of this section, shall be included in the water balance study when the total dissolved solids concentration of the reclaimed water presents the potential for developing excessive soil salinity buildup due to the long term operation of the irrigation system.

(2) The irrigation site must be maintained with a vegetative cover or be under cultivation during times when reclaimed water is being applied.

(3) The irrigation practices shall be designed so as to prevent incidental ponding or standing water except where local farming conditions and the accepted irrigation delivery systems and cropping patterns are such that, as an unavoidable consequence of such conditions, systems, and patterns, there will be standing water.

(4) Irrigation application rates and application times shall be developed so as to minimize "wet grass" conditions in unrestricted landscaped areas during the periods the area could be in use.

(5) Irrigation systems shall be designed so that the irrigation spray does not reach any privately-owned premises outside the designated irrigation area or reach public drinking fountains.

(6) There shall be no application of effluent when the ground is water saturated or frozen.

(7) Distribution systems must be designed to prevent operation by unauthorized personnel.

(8) Irrigation operations shall be managed in a manner to minimize the inadvertent contact of reclaimed water with humans.

(9) Operational or tailwater controls shall be provided to preclude discharge of reclaimed water from irrigation sites.

Adopted January 8, 1997 Effective February 12, 1997

§210.25. Special Design Criteria for Reclaimed Water Systems.

(a) All hose bibs and faucets shall be painted purple and designed to prevent connection to a standard water hose. Hose bibs shall be located in locked, below grade vaults which shall be clearly labeled as being of non-potable quality. As an alternative to the use of locked, below grade vaults with standard hose bibs services, hose bibs may be placed in a non-lockable service box which can only be operated by a special tool so long as the hose bib is clearly labeled as non-potable water, in accordance with subsection (b) of this section.

(b) One of the following requirements must be met by the user or provider, for any area where reclaimed water is stored or where there exist hose bibs or faucets:

(1) Signs having a minimum size of eight inches by eight inches, as shown in Figure 1, shall be posted at all storage areas and on all hose bibs and faucets reading, in both English and Spanish, "Reclaimed Water, Do Not Drink" or similar warning. (Figure 1: 30 TAC §210.25(b)(1));

FIGURE 1: 30 TAC §210.25(b)(1)

DO NOT DRINK THE WATER

NO TOMAR EL AGUA

(2) The area shall be secured to prevent access by the public.

(c) Reclaimed water piping shall be separated from potable water piping by a horizontal distance of at least nine feet. Where the nine foot separation distance cannot be achieved, the reclaimed water piping must meet the line separation requirements of Chapter 290 of this title (relating to Water Hygiene).

(d) Where a reclaimed water line parallels a sewer line, the reclaimed water line shall be constructed in accordance with subsection (e) or (f) of this section. The horizontal separation distance shall be three feet (outside to outside) with the reclaimed water line at the level of or above the sewer line. Reclaimed water lines which parallel sewer lines may be placed in the same benched trench. Where a reclaimed water line crosses a sewer line, the requirements of §290.44(e)(5)(B) of this title (relating to Location of Water Lines) shall be followed, with “reclaimed water line” substituted in §290.44(e) of this title (relating to Location of Water Lines) for “water line.”

(e) Reclaimed water lines which transport reclaimed water under pressure shall be sized according to acceptable engineering practices for the needs of the reclaimed water users. The designer shall consider methods to prevent or maintain lines to mitigate the effect of the deposition of solids in such lines. Pipe specified for reclaimed water force mains shall be of a type having an expected life at least as long as that of the lift station and shall be suitable for the reclaimed water being pumped and operating pressure to which it will be subjected. All pipe shall be identified in the technical specifications with appropriate American Society for Testing and Materials, American National Standard Institute, or American Water Works Association (AWWA) standard numbers for both quality control (dimensions, tolerance, and installation such as bedding or backfill). All pipes and fittings shall have a minimum working pressure rating of 150 pounds per square inch. Final plans and specifications shall describe required pressure testing for all installed reclaimed water force mains. Minimum test pressure shall be 1.5 times the maximum design pressure. Allowable leakage rates shall be determined as described in §317.2(d)(4) of this title (relating to Pressure Sewer Systems).

(f) Gravity flow reclaimed water lines shall meet the requirements of §317.2 (a) of this title (relating to General Requirements) and §317.2(c) of this title (relating to High Velocity Protection). The designer shall consider methods to prevent high velocity scour or maintain line fluid velocity to mitigate the effects of the deposition of solids in the gravity conveyance.

(g) All exposed piping and piping within a building shall be either purple pipe or painted purple. All buried piping installed after the effective date of these rules shall be one of the following: manufactured in purple, painted purple, taped with purple metallic tape, or bagged in purple. All exposed piping should be stenciled in white with a warning reading "NON-POTABLE WATER." All exposed or buried reclaimed water piping constructed at a wastewater treatment facility is exempt from the color coding requirements of this section.

(h) When applicable, in accordance with §317.1(a)(3) - (4) of this title, (relating to General Provisions), the design of distribution systems which will convey reclaimed water to a user shall be submitted to the executive director and must receive an approval. The design of the distribution systems must meet the requirements of Chapter 317 of this title (relating to Design Criteria for Sewerage Systems). Where a municipality is the plan review authority for certain sewer systems which transport primarily domestic waste,

in accordance with §317.1(a)(5) of this title, in lieu of the commission, design submittal will not be subject to submittal to the commission and instead must be approved by the municipality. Materials shall be submitted for approval by the executive director in accordance with the Texas Engineering Practice Act (Article 3271a, Vernon's Annotated Texas Statutes).

(i) All ground level and elevated storage tanks shall be designed, installed, and constructed in accordance with current AWWA standards with reference to materials to be used and construction practices to be followed, except for health-based standards strictly related to potable water storage and contact practices, where appropriately less restrictive standards may be applied.

Adopted January 22, 1997 Effective February 12, 1997

SUBCHAPTER C: QUALITY CRITERIA AND SPECIFIC USES FOR RECLAIMED WATER §§210.31 - 210.36

§210.31. Applicability.

This subchapter applies to the reclaimed water producer, the reclaimed water provider and the reclaimed water user. This subchapter sets the specific uses, the quality standards, as well as the monitoring, record keeping, and reporting standards for reclaimed water.

Adopted January 8, 1997 Effective February 12, 1997

§210.32. Specific Uses of Reclaimed Water.

Numerical parameter limits pertaining to specific reclaimed water use categories are contained in §210.33 of this title (relating to Quality Standards for Using Reclaimed Water). These limits apply to reclaimed water before discharge to initial holding ponds or a reclaimed water distribution system. It shall be the responsibility of the reclaimed water producer to establish that the reclaimed water meets the quality limits at the sample point for the intended use in accordance with the monitoring requirements identified in §210.34 of this title (relating to Sampling and Analysis).

(1) Type I Reclaimed Water Use. This type of use includes irrigation or other uses in areas where the public may be present during the time when irrigation takes place or other uses where the public may come in contact with the reclaimed water. The following types of uses would be considered Type I uses:

(A) Residential irrigation, including landscape irrigation at individual homes.

(B) Urban uses, including irrigation of public parks, golf courses with unrestricted public access, school yards, or athletic fields.

(C) Use of reclaimed water for fire protection, either in internal sprinkler systems or external fire hydrants.

(D) Irrigation of food crops where the applied reclaimed water may have direct contact with the edible part of the crop, unless the food crop undergoes a pasteurization process.

(E) Irrigation of pastures for milking animals.

(F) Maintenance of impoundments or natural water bodies where recreational activities, such as wading or fishing, are anticipated even though the water body was not specifically designed for such a use.

(G) Toilet or urinal flush water.

(H) Other similar activities where the potential for unintentional human exposure may occur.

(2) Type II Reclaimed Water Use. This type of use includes irrigation or other uses in areas where the public is not present during the time when irrigation activities occur or other uses where the public would not come in contact with the reclaimed water. The following are examples of uses that would be considered Type II uses.

(A) Irrigation of sod farms, silviculture, limited access highway rights of way, and other areas where human access is restricted or unlikely to occur. The restriction of access to areas under irrigation with reclaimed water could include the following:

(i) The irrigation site is considered to be remote.

(ii) The irrigation site is bordered by walls or fences and access to the site is controlled by the owner/operator of the irrigation site.

(iii) The irrigation site is not used by the public during the times when irrigation operations are in progress. Such sites may include golf courses, cemeteries, and landscaped areas surrounding commercial or industrial complexes. The "syringing" or "wetting" of greens and tees on golf courses shall be allowable under Type II so long as the "syringing" is done with hand-held hoses as opposed to automatic irrigation equipment. The public need not be excluded from areas where irrigation is not taking place. For example, irrigation of golf course fairways at night would not prohibit the use of club house or other facilities located a sufficient distance from the irrigation.

(iv) The irrigation site is restricted from public access by local ordinance or law with specific standards to achieve such a purpose.

(B) Irrigation of food crops where the reclaimed water is not likely to have direct contact with the edible part of the crop, or where the food crop undergoes pasteurization prior to distribution for consumption.

(C) Irrigation of animal feed crops other than pasture for milking animals.

(D) Maintenance of impoundments or natural water bodies where direct human contact is not likely.

(E) Soil compaction or dust control in construction areas where application procedures minimize aerosol drift to public areas.

(F) Cooling tower makeup water. Use for cooling towers which produce significant aerosols adjacent to public access areas may have special requirements.

(G) Irrigation or other non-potable uses of reclaimed water at a wastewater treatment facility.

(3) Any Type I reclaimed water may also be utilized for any of the Type II uses identified in paragraph (2) of this section.

Adopted January 8, 1997 Effective February 12, 1997

§210.33. Quality Standards for Using Reclaimed Water.

The following conditions apply to the types of uses of reclaimed water. At a minimum, the reclaimed water producer shall only transfer reclaimed water of the following quality as described for each type of specific use:

(1) for Type I reclaimed water uses, reclaimed water on a 30-day average shall have a quality of:

BOD_5 or $CBOD_5$	5 mg/l
Turbidity	3 NTU
Fecal coliform or *E. coli*	20 CFU/100 ml*
Fecal coliform or *E. coli*	75 CFU/100 ml**
Enterococci	4 CFU/100 ml*
Enterococci	9 CFR/100 ml**

* 30-day geometric mean

** maximum single grab sample

(2) for Type II reclaimed water use, reclaimed water on a 30-day average shall have a quality of:

(A) for a system other than pond system:

BOD_5	20 mg/l
or $CBOD_5$	15 mg/l
Fecal coliform or *E. coli*	200 CFU/100 ml*
Fecal coliform or *E. coli*	800 CFU/100 ml**
Enterococci	35 CFU/100 ml*

Enterococci	89 CFU/100 ml**

* 30-day geometric mean

** maximum single grab sample

(B) for a pond system:

BOD_5	30 mg/l
Fecal coliform or *E. coli*	200 CFU/100 ml*
Fecal coliform or *E. coli* (not to exceed)	800 CFU/100 ml**
Enterococci	35 CFU/100 ml*
Enterococci	89 CFU/100 ml**

* 30-day geometric mean

** maximum single grab sample

Adopted November 4, 2009 Effective November 26, 2009

§210.34. Sampling and Analysis.

The reclaimed water producer shall sample the reclaimed water prior to distribution to a user to assure that the water quality is in accord with the intended contracted use. Analytical methods shall be in accord with those specified in Chapter 319 of this title (relating to Monitoring and Reporting). The minimum sampling and analysis frequency for reclaimed water for the applicable parameters identified in §210.33 of this title (relating to Quality Standards for the Use of Reclaimed Water) is as follows:

(1) Type I Reclaimed Water Uses twice per week.

(2) Type II Reclaimed Water Uses once per week.

Adopted January 8, 1997 Effective February 12, 1997

§210.35. Guidelines for Certain Distribution Systems.

The commission recommends that a provider or user maintain a plan to carry out periodic fecal coliform sampling within certain reclaimed water distribution piping systems. Such a plan does not need the approval or review of the commission. This periodic sampling should occur in instances where residential irrigation, including landscape irrigation at individual homes occurs, or where specific urban

uses such as irrigation of public parks, school yards, or athletic fields occurs. The plan should specify activities by the provider or user to respond to human health threats if undesirable fecal coliform test results or trends are detected.

Adopted January 8, 1997 Effective February 12, 1997

§210.36. Record Keeping and Reporting.

The reclaimed water provider and user shall maintain records on site for a period of five years.

(1) Records to be maintained by the provider include:

(A) copies of notifications made to the commission concerning reclaimed water projects.

(B) as applicable, copies of contracts made with each reclaimed water user (this requirement does not include reclaimed water users at residences that have separate distribution lines for potable water).

(C) records of volume of water delivered to each reclaimed water user per delivery (this requirement does not apply to reclaimed water users at residences that have separate distribution lines for potable water).

(D) reclaimed water quality analyses.

(2) The reclaimed water provider or producer shall report to the commission on a monthly basis the following information on forms furnished by the executive director. Such reports are due to the commission by the 20th day of the month following the reporting period.

(A) volume of reclaimed water delivered to a user or provider.

(B) quality of reclaimed water delivered to a user or provider reported as a monthly average for each quality criteria except those listed as "not to exceed" which shall be reported as individual analyses.

Adopted January 22, 1997 Effective February 12, 1997

SUBCHAPTER F: STANDARDS FOR DESIGNING, INSTALLING, AND MAINTAINING LANDSCAPE IRRIGATION SYSTEMS
§§344.60 - 344.65
Effective January 1, 2009

§344.60. Water Conservation.

All irrigation systems shall be designed, installed, maintained, altered, repaired, serviced, and operated in a manner that will promote water conservation as defined in §344.1(44) of this title (relating to Definitions).

Adopted June 4, 2008 Effective January 1, 2009

§344.61. Minimum Standards for the Design of the Irrigation Plan.

(a) An irrigator shall prepare an irrigation plan for each site where a new irrigation system will be installed. A paper or electronic copy of the irrigation plan must be on the job site at all times during the installation of the irrigation system. A drawing showing the actual installation of the system is due to each irrigation system owner after all new irrigation system installations. During the installation of the irrigation system, variances from the original plan may be authorized by the licensed irrigator if the variance from the plan does not:

(1) diminish the operational integrity of the irrigation system;

(2) violate any requirements of this chapter; and

(3) go unnoted in red on the irrigation plan.

(b) The irrigation plan must include complete coverage of the area to be irrigated. If a system does not provide complete coverage of the area to be irrigated, it must be noted on the irrigation plan.

(c) All irrigation plans used for construction must be drawn to scale. The plan must include, at a minimum, the following information:

(1) the irrigator's seal, signature, and date of signing;

(2) all major physical features and the boundaries of the areas to be watered;

(3) a North arrow;

(4) a legend;

(5) the zone flow measurement for each zone;

(6) location and type of each:

(A) controller;

(B) sensor (for example, but not limited to, rain, moisture, wind, flow, or freeze);

(7) location, type, and size of each:

(A) water source, such as, but not limited to a water meter and point(s) of connection;

(B) backflow prevention device;

(C) water emission device, including, but not limited to, spray heads, rotary sprinkler heads, quick-couplers, bubblers, drip, or micro-sprays;

(D) valve, including, but not limited to, zone valves, master valves, and isolation valves;

(E) pressure regulation component; and

(F) main line and lateral piping.

(8) the scale used; and

(9) the design pressure.

Adopted June 4, 2008 Effective January 1, 2009

§344.62. Minimum Design and Installation Requirements.

(a) No irrigation design or installation shall require the use of any component, including the water meter, in a way which exceeds the manufacturer's published performance limitations for the component.

(b) Spacing.

(1) The maximum spacing between emission devices must not exceed the manufacturer's published radius or spacing of the device(s). The radius or spacing is determined by referring to the manufacturer's published specifications for a specific emission device at a specific operating pressure.

(2) New irrigation systems shall not utilize above-ground spray emission devices in landscapes that are less than 48 inches not including the impervious surfaces in either length or width and which contain impervious pedestrian or vehicular traffic surfaces along two or more perimeters. If pop-up sprays or rotary sprinkler heads are used in a new irrigation system, the sprinkler heads must direct flow away from any adjacent surface and shall not be installed closer than four inches from a hardscape, such as, but not limited to, a building foundation, fence, concrete, asphalt, pavers, or stones set with mortar.

(3) Narrow paved walkways, jogging paths, golf cart paths or other small areas located in cemeteries, parks, golf courses or other public areas may be exempted from this requirement if the runoff drains into a landscaped area.

(c) Water pressure. Emission devices must be installed to operate at the minimum and not above the maximum sprinkler head pressure as published by the manufacturer for the nozzle and head spacing that is used. Methods to achieve the water pressure requirements include, but are not limited to, flow control valves, a pressure regulator, or pressure compensating spray heads.

(d) Piping. Piping in irrigation systems must be designed and installed so that the flow of water in the pipe will not exceed a velocity of five feet per second for polyvinyl chloride (PVC) pipe.

(e) Irrigation Zones. Irrigation systems shall have separate zones based on plant material type, microclimate factors, topographic features, soil conditions, and hydrological requirements.

(f) Matched precipitation rate. Zones must be designed and installed so that all of the emission devices in that zone irrigate at the same precipitation rate.

(g) Irrigation systems shall not spray water over surfaces made of concrete, asphalt, brick, wood, stones set with mortar, or any other impervious material, such as, but not limited to, walls, fences, sidewalks, streets, etc.

(h) Master valve. When provided , a master valve shall be installed on the discharge side of the backflow prevention device on all new installations.

(i) PVC pipe primer solvent. All new irrigation systems that are installed using PVC pipe and fittings shall be primed with a colored primer prior to applying the PVC cement in accordance with the Uniform Plumbing Code (Section 316) or the International Plumbing Code (Section 605).

(j) Rain or moisture shut-off devices or other technology. All new automatically controlled irrigation systems must include sensors or other technology designed to inhibit or interrupt operation of the irrigation system during periods of moisture or rainfall. Rain or moisture shut-off technology must be installed according to the manufacturer's published recommendations. Repairs to existing automatic irrigation systems that require replacement of an existing controller must include a sensor or other technology designed to inhibit or interrupt operation of the irrigation system during periods of moisture or rainfall. El Paso, Hudspeth, Culberson, Jeff Davis, Presidio, Brewster, Terrell, Loving, Winkler, Ward, Reeves, Ector, Crane and Pecos are excluded from this requirement.

(k) Isolation valve. All new irrigation systems must include an isolation valve between the water meter and the backflow prevention device.

(l) Depth coverage of piping. Piping in all irrigation systems must be installed according to the manufacturer's published specifications for depth coverage of piping.

(1) If the manufacturer has not published specifications for depth coverage of piping, the piping must be installed to provide minimum depth coverage of six inches of select backfill, between the top of the pipe and the natural grade of the topsoil. All portions of the irrigation system that fail to meet this standard must be noted on the irrigation plan. If the area being irrigated has rock at a depth of six inches or less, select backfill may be mounded over the pipe. Mounding must be noted on the irrigation plan and discussed with the irrigation system owner or owner's representative to address any safety issues.

(2) If a utility, man-made structure, or roots create an unavoidable obstacle, which makes the six-inch depth coverage requirement impractical, the piping shall be installed to provide a minimum of two inches of select backfill between the top of the pipe and the natural grade of the topsoil.

(3) All trenches and holes created during installation of an irrigation system must be backfilled and compacted to the original grade.

(m) Wiring irrigation systems.

(1) Underground electrical wiring used to connect an automatic controller to any electrical component of the irrigation system must be listed by Underwriters Laboratories as acceptable for burial underground.

(2) Electrical wiring that connects any electrical components of an irrigation system must be sized according to the manufacturer's recommendation.

(3) Electrical wire splices which may be exposed to moisture must be waterproof as certified by the wire splice manufacturer.

(4) Underground electrical wiring that connects an automatic controller to any electrical component of the irrigation system must be buried with a minimum of six inches of select backfill.

(n) Water contained within the piping of an irrigation system is deemed to be non-potable. No drinking or domestic water usage, such as, but not limited to, filling swimming pools or decorative fountains, shall be connected to an irrigation system. If a hose bib (an outdoor water faucet that has hose threads on the spout) is connected to an irrigation system for the purpose of providing supplemental water to an area, the hose bib must be installed using a quick coupler key on a quick coupler installed in a covered purple valve box and the hose bib and any hoses connected to the bib must be labeled "non-potable, not safe for drinking." An isolation valve must be installed upstream of a quick coupler connecting a hose bib to an irrigation system.

(o) Beginning January 1, 2010, either a licensed irrigator or a licensed irrigation technician shall be on-site at all times while the landscape irrigation system is being installed. When an irrigator is not on-site, the irrigator shall be responsible for ensuring that a licensed irrigation technician is on-site to supervise the installation of the irrigation system.

Adopted June 4, 2008 Effective January 1, 2009

§344.63. Completion of Irrigation System Installation.

Upon completion of the irrigation system, the irrigator or irrigation technician who provided supervision for the on-site installation shall be required to complete four items:

(1) a final "walk through" with the irrigation system's owner or the owner's representative to explain the operation of the system;

(2) The maintenance checklist on which the irrigator or irrigation technician shall obtain the signature of the irrigation system's owner or owner's representative and shall sign, date, and seal the checklist. If the irrigation system's owner or owner's representative is unwilling or unable to sign the maintenance checklist, the irrigator shall note the time and date of the refusal on the irrigation system's owner or owner's representative's signature line. The irrigation system owner or owner's representative will be given the original maintenance checklist and a duplicate copy of the maintenance checklist shall be maintained by the irrigator. The items on the maintenance checklist shall include but are not limited to:

(A) the manufacturer's manual for the automatic controller, if the system is automatic;

(B) a seasonal (spring, summer, fall, winter) watering schedule based on either current/real time evapotranspiration or monthly historical reference evapotranspiration (historical ET) data, monthly effective rainfall estimates, plant landscape coefficient factors, and site factors;

(C) a list of components, such as the nozzle, or pump filters, and other such components; that require maintenance and the recommended frequency for the service; and

(D) the statement, "This irrigation system has been installed in accordance with all applicable state and local laws, ordinances, rules, regulations or orders. I have tested the system and determined that it has been installed according to the Irrigation Plan and is properly adjusted for the most efficient application of water at this time."

(3) A permanent sticker which contains the irrigator's name, license number, company name, telephone number and the dates of the warranty period shall be affixed to each automatic controller installed by the irrigator or irrigation technician. If the irrigation system is manual, the sticker shall be affixed to the original maintenance checklist. The information contained on the sticker must be printed with waterproof inkand include:

(4) The irrigation plan indicating the actual installation of the system must be provided to the irrigation system's owner or owner representative.

Adopted June 4, 2008 Effective January 1, 2009

§344.64. Maintenance, Alteration, Repair, or Service of Irrigation Systems.

(a) The irrigator is responsible for all work that the irrigator performed during the maintenance, alteration, repair, or service of an irrigation system during the warranty period. The irrigator or business owner is not responsible for the professional negligence of any other irrigator who subsequently conducts any irrigation service on the same irrigation system.

(b) All trenches and holes created during the maintenance, alteration, repair, or service of an irrigation system must be returned to the original grade with compacted select backfill.

(c) Colored PVC pipe primer solvent must be used on all pipes and fittings used in the maintenance, alteration, repair, or service of an irrigation system in accordance with the Uniform Plumbing Code (Section 316) or the International Plumbing Code (Section 605).

(d) When maintenance, alteration, repair or service of an irrigation system involves excavation work at the water meter or backflow prevention device, an isolation valve shall be installed, if an isolation valve is not present.

Adopted June 4, 2008 Effective January 1, 2009

§344.65. Reclaimed Water.

Reclaimed water may be utilized in landscape irrigation systems if:

(1) there is no direct contact with edible crops, unless the crop is pasteurized before consumption;

(2) the irrigation system does not spray water across property lines that do not belong to the irrigation system's owner;

(3) the irrigation system is installed using purple components;

(4) the domestic potable water line is connected using an air gap or a reduced pressure principle backflow prevention device, in accordance with §290.47(i) of this title (relating to Appendices);

(5) a minimum of an eight inch by eight inch sign, in English and Spanish, is prominently posted on/in the area that is being irrigated, that reads, "RECLAIMED WATER – DO NOT DRINK" and "AGUA DE RECUPERACIÓN – NO BEBER"; and

(6) backflow prevention on the reclaimed water supply line shall be in accordance with the regulations of the water purveyor.

Adopted June 4, 2008 Effective January 1, 2009

THE STATE OF TEXAS §
COUNTY OF BRAZORIA §
CITY OF MANVEL §

LARRY AKERY, COUNCIL PLACE 1
LORRAINE HEHN, COUNCIL PLACE 2
NICCOLE TYSON, COUNCIL PLACE 3
DAN DAVIS, COUNCIL PLACE 4
JASON ALBERT, COUNCIL PLACE 5
JEROME HUDSON, COUNCIL PLACE 6

DEBRA DAVISON, MAYOR
KYLE JUNG, CITY MANAGER
TAMMY BELL, CITY SECRETARY

MINUTES 2/7/2022

Workshop Session

Mayor Davison called the workshop of the Manvel City Council to order at 6:00 p.m. Those in attendance were:

Present: Mayor Debra Davison
City Council Member Place 1 Larry Akery
City Council Member Place 2 Lorraine Hehn
City Council Member Place 3 Niccole Tyson
City Council Member Place 4 Dan Davis (Late)
City Council Member Place 5 Jason Albert
City Council Member Place 6 Jerome Hudson

Absent: None

Also Present: Kyle Jung, City Manager
Dan Johnson, Assistant City Manager/City Engineer
Robert Gervais, City Attorney
Tammy Bell, City Secretary
Keith Traylor, Chief of Police
Chris Thomas, Finance Director
Gilbert Salas, Director of Community Services
Jessica Rodriguez, Development Services Director
Kwasi Bosompem, Planner

Presentation/Update on the Master Water Plan

David Dunn and John Peterson of HDR Engineering gave a presentation on the Master Water Plan.

Discussion on any subject listed on the Agenda dated February 7, 2022.

Mayor Davison adjourned the workshop at 6:49 p.m.

Regular Session

Call To Order

Mayor Davison called the meeting of the Manvel City Council to order at 7:02 p.m.
Those in attendance were:

Present:	Mayor Debra Davison
	City Council Member Place 1 Larry Akery
	City Council Member Place 2 Lorraine Hehn
	City Council Member Place 3 Niccole Tyson
	City Council Member Place 5 Jason Albert
	City Council Member Place 6 Jerome Hudson
	City Council Member Place 4 Dan Davis
Absent:	None
Also Present:	Kyle Jung, City Manager
	Dan Johnson, Assistant City Manager/City Engineer
	Robert Gervais, City Attorney
	Tammy Bell, City Secretary
	Keith Traylor, Chief of Police
	Chris Thomas, Finance Director
	Gilbert Salas, Director of Community Services
	Jessica Rodriguez, Development Services Director
	Kwasi Bosompem, Planner

Inspirational Reading - Council Member Dan Davis

Pledge

Citizen Comments: "Comment Card" Required

Mr. Johnson - spoke about Cameron Recycling.
Read an email sent on 9/14/2014 from Darlene Hall sent to the City Secretary asking for help about issues ongoing with Cameron Recycling.

Public Hearing

TO HEAR INPUT FROM THE PUBLIC ON AN ORDINANCE OF THE CITY OF MANVEL, TEXAS, AMENDING THE ZONING ORDINANCE OF THE CITY, BY AMENDING THE ZONING CLASSIFICATION OF 21,000 SQUARE FEET LOCATED AT 7507 MASTERS ROAD, MANVEL, TEXAS, FROM LIGHT COMMERCIAL DISTRICT/STATE HIGHWAY 6 OVERLAY DISTRICT (LC/SH6) TO LIGHT COMMERCIAL DISTRICT/STATE HIGHWAY 6 OVERLAY DISTRICT WITH SPECIFIC USE PERMIT LC/SH6-SUP); PROVIDING FOR THE GRANTING OF A SPECIFIC USE PERMIT WITH CONDITIONS TO AUTHORIZE THE USE OF PROPERTY FOR NAICS USE 621111 “OFFICES OF PHYSICIANS (EXCEPT MENTAL HEALTH SPECIALISTS)”; PROVIDING FOR THE AMENDMENT OF THE CITY’S OFFICIAL ZONING MAP; PROVIDING SEVERABILITY; AND PROVIDING A PENALTY IN AN AMOUNT NOT TO EXCEED $2,000 FOR EACH DAY OF VIOLATION OF ANY PROVISION HEREOF.

Opened at 7:06 p.m.
1st call for comments
None
2nd call for comments
None

3rd call for comments
None
Closed at 7:08 p.m.

City Manager Update

COVID numbers compared to last meeting:
6,032 total cases in Manvel
Up 680 from last meeting
372 confirmed, down 893
68 probable, down 9
5,549 recovered, up 1,581
1 additional death, total of 43 deaths in Manvel

Winter weather storm - City did not experience any damage or issues

Staff - New police officer, water treatment plant operator, extended offer to Public Information Officer

Regular Agenda

1. Consideration and possible action to approve Final Plat for Meridiana Detention Reserve V Phase 2;
   Being a subdivision of 1.074 acres out of the H.T. & B.R.R. Company Survey, Section 61, Abstract 282, and the Oliver Hall Survey, Abstract 203, City of Manvel, Brazoria County, Texas. (30-Day extension forwarded with favorable recommendation FAILED by PD&Z with a 0/5 vote)

2. Consideration and possible action to approve Final Plat for Meridiana Section 52;
   Being a subdivision of 21.88 acres out of the H.T. & B.R.R. Company Survey, Section 61, Abstract 282, and the Oliver Hall Survey, Abstract 203, City of Manvel, Brazoria County, Texas. (30-Day extension forwarded with favorable recommendation FAILED by PD&Z with a 0/5 vote)

3. Consideration and possible action to approve Final Plat for Meridiana Detention Reserve M-2;
   Being a subdivision of 4.644 acres out of the H.T. & B.R.R. Company Survey, Section 61, Abstract 282, and the Oliver Hall Survey, Abstract 203, City of Manvel, Brazoria County, Texas. (30-Day extension forwarded with favorable recommendation FAILED by PD&Z with a 0/5 vote)

4. Consideration and possible action to approve Final Plat for Meridiana Detention Reserve N-2;
   Being a subdivision of 7.081 acres out of the H.T. & B.R.R. Company Survey, Section 61, Abstract 282, and the Oliver Hall Survey, Abstract 203, City of Manvel, Brazoria County, Texas. (30-Day extension forwarded with favorable recommendation FAILED by PD&Z with a 0/5 vote)

Council Member Dan Davis made the motion to approve agenda items 1, 2, 3, and 4.
Council Member Niccole Tyson seconded the motion.
The motion FAILED with a vote: 0/7
Yes: None
No: Mayor Debra Davison, City Council Member Place 1 Larry Akery, City

Council Member Place 2 Lorraine Hehn, City Council Member Place 3 Niccole Tyson, City Council Member Place 4 Dan Davis, City Council Member Place 5 Jason Albert, City Council Member Place 6 Jerome Hudson

Absent: None

Abstained: None

5. Consideration and possible action to direct staff to provide Applicants written statements of the conditions for any conditional approvals, and the reasons for disapproval of any plans or plats that were not approved, per Texas Local Government Code §212.0091.

Council Member Hudson made the motion to approve. Council Member Hehn seconded the motion.

The motion carried with a vote: 7/0

Yes: Mayor Debra Davison, City Council Member Place 1 Larry Akery, City Council Member Place 2 Lorraine Hehn, City Council Member Place 3 Niccole Tyson, City Council Member Place 4 Dan Davis, City Council Member Place 5 Jason Albert, City Council Member Place 6 Jerome Hudson

No: None

Absent: None

Abstained: None

6. Consideration and possible action to approve the first of two readings of Ordinance 2022-O-03; AN ORDINANCE OF THE CITY OF MANVEL, TEXAS, AMENDING THE ZONING ORDINANCE OF THE CITY, BY AMENDING THE ZONING CLASSIFICATION OF 21,000 SQUARE FEET LOCATED AT 7507 MASTERS ROAD, MANVEL, TEXAS, FROM LIGHT COMMERCIAL DISTRICT/STATE HIGHWAY 6 OVERLAY DISTRICT (LC/SH6) TO LIGHT COMMERCIAL DISTRICT/STATE HIGHWAY 6 OVERLAY DISTRICT WITH SPECIFIC USE PERMIT LC/SH6-SUP); PROVIDING FOR THE GRANTING OF A SPECIFIC USE PERMIT WITH CONDITIONS TO AUTHORIZE THE USE OF PROPERTY FOR NAICS USE 621111 “OFFICES OF PHYSICIANS (EXCEPT MENTAL HEALTH SPECIALISTS)”; PROVIDING FOR THE AMENDMENT OF THE CITY’S OFFICIAL ZONING MAP; PROVIDING SEVERABILITY; AND PROVIDING A PENALTY IN AN AMOUNT NOT TO EXCEED $2,000 FOR EACH DAY OF VIOLATION OF ANY PROVISION HEREOF. (Forwarded with favorable recommendation with conditions by PD&Z with a 5/0 vote)

Council Member Hudson made the motion to approve. Council Member Hehn seconded the motion.

The motion carried with a vote: 6/0 with 1 abstain

Council Member Dan Davis Filed an Abstention Affidavit

Yes: Mayor Debra Davison, City Council Member Place 1 Larry Akery, City Council Member Place 2 Lorraine Hehn, City Council Member Place 3 Niccole Tyson, City Council Member Place 5 Jason Albert, City Council Member Place 6 Jerome Hudson

No: None

Absent: None

Abstained: City Council Member Place 4 Dan Davis

Council Member Albert corrected the agenda to reflect the PD&Z vote for the recommendation being a 4-1 vote.

7. Consideration and possible action to approve the first of two readings of Ordinance 2022-O-05; AN ORDINANCE OF THE CITY OF MANVEL, TEXAS, AMENDING CHAPTER 50. *PLANNING AND DEVELOPMENT*, ARTICLE III. *COMPREHENSIVE PLAN*, BY APPROVING THE 2022 MASTER WASTEWATER PLAN UPDATE DOCUMENT AS THE 2022 MASTER WASTEWATER PLAN; AMENDING SECTION 50-55. *MASTER WASTEWATER PLAN* INTEGRATING THE CITY'S 2022 MASTER WASTEWATER PLAN INTO THE CITY'S COMPREHENSIVE PLANS; PROVIDING FOR CONFORMITY OF ALL WASTEWATER REGULATIONS TO THE MASTER WASTEWATER PLAN; PROVIDING A PENALTY IN AN AMOUNT NOT TO EXCEED $2,000.00 PER DAY FOR EACH DAY OF VIOLATION OF ANY PROVISION HEREOF; AND PROVIDING FOR SEVERABILITY; AND PROVIDING A SEVERANCE CLAUSE AND EFFECTIVE DATE.

Council Member Hehn made the motion to approve. Council Member Hudson seconded the motion.

The motion carried with a vote: 7/0

Yes: Mayor Debra Davison, City Council Member Place 1 Larry Akery, City Council Member Place 2 Lorraine Hehn, City Council Member Place 3 Niccole Tyson, City Council Member Place 4 Dan Davis, City Council Member Place 5 Jason Albert, City Council Member Place 6 Jerome Hudson

No: None

Absent: None

Abstained: None

8. Consideration and possible action on appointing members to the Animal Control Advisory Board.

Council Member Albert made the motion to approve the appointment of James McClain, Jessica Rodriguez, Amanda Hoffpauir, and Alayna Goodson. Council Member Hehn seconded the motion.

The motion carried with a vote: 7/0

Yes: Mayor Debra Davison, City Council Member Place 1 Larry Akery, City Council Member Place 2 Lorraine Hehn, City Council Member Place 3 Niccole Tyson, City Council Member Place 4 Dan Davis, City Council Member Place 5 Jason Albert, City Council Member Place 6 Jerome Hudson

No: None

Absent: None

Abstained: None

9. Consideration and possible action to approve Resolution 2022-R-01;
A RESOLUTION ADOPTING AN AMENDED PERSONNEL POLICIES AND PROCEDURES HANDBOOK DATED FEBRUARY 7, 2022 FOR ALL CITY EMPLOYEES; PROVIDING THAT THIS RESOLUTION SHALL BECOME EFFECTIVE FROM AND AFTER ITS PASSAGE.

Council Member Davis made the motion to approve with the recommendation from Council Member Albert to clean up section 64. Council Member Tyson seconded the motion.

The motion carried with a vote: 7/0

Yes: Mayor Debra Davison, City Council Member Place 1 Larry Akery, City Council Member Place 2 Lorraine Hehn, City Council Member Place 3 Niccole Tyson, City Council Member Place 4 Dan Davis, City Council Member Place 5 Jason Albert, City Council Member Place 6 Jerome Hudson
No: None
Absent: None
Abstained: None

10. Consideration and possible action to direct staff on the following;
A) Noise Ordinance
B) Zoning Ordinance (Landscaping)

Jessica Rodriguez shares her research on noise ordinance ideas.
Council Member Hehn asked Chief Traylor about the enforcement process.
Chief - should be a sustained noise that is a clear nuisance and there should be a mechanism of measuring based on the zones. Need to update the ordinance in order to be able to properly enforce it.
Council Member Albert - What are our plans to address existing issues after this?
Council Member Davis - Feels this is the start in the right direction. If the city adopts something that adopts the noise standards that places zones, what would that mean for current businesses?
Is the current ordinance being enforced? If we are not, what do we need to do in the meantime to enforce the current ordinance? The opinion of Council Member Davis is that we need to enforce what is in the Ordinance.
Kyle - Anything over 65 decimals is a violation of the Ordinance.
Mayor Davison - Has issues with current ordinance with approaching noise at a spike, rather than sustained noise. Makes it hard to enforce.
Council Member Hehn likes the direction staff is going with the proposed changes but wants to make it clear what ever is proposed for adoption needs to be clearly and easily enforceable.

11. Discussion and update on participation of Brazoria County C&R 3 in the S. Masters drainage project as requested by Council Member Akery.

Learned about 3 weeks ago that the Drainage Plan was approved by the District. C&R 3 wants to have a meeting with the city staff to discuss ideas, equipment, supplies and timing.
Mayor Davison asked if it would be helpful to get the parties together, just those who are going to be participating and possibly having interlocal with all those partners.
Dan Johnson - Possibly have the Mayor and Larry at the meeting table in place of a full-out forum.

12. Consideration and possible action to direct staff on alternatives to speed up the process of building a new Police Department facility. (Requested by Council Member Albert)

Council Member Albert started off with concerns about the Police Department being proposed as the first building being built in the city center due to possibly not being able to get quick access out of the complex when a call comes in. Proposes idea of tearing down building that houses Development Services and building new building to make that building and City Hall PD and Court, and then building new City Hall first instead of PD at the City Center.
Suggestions - The city has a provision not to build new critical facilities in the flood plain.
Dan Johnson - Answers question could another building be built on the current property - no, but if we purchase the vacant lot possibly.
Could possibly build on the property the city owns on FM 1128 where the current PD is located.

This option would possibly leave a 2-acre park where the current PD building is located.

Mayor suggests a workshop to cement some of these ideas and to talk about land purchase. Also suggests a satellite (substation) at the City Center for PD to reduce response time.

Council Member Albert made the motion to direct the City Manager to erect the new police department facility on FM 1128 city property in place of being in the City Center complex. Mayor Davison seconded the motion.

The motion carried with a vote: 7/0

Yes:	Mayor Debra Davison, City Council Member Place 1 Larry Akery, City Council Member Place 2 Lorraine Hehn, City Council Member Place 3 Niccole Tyson, City Council Member Place 4 Dan Davis, City Council Member Place 5 Jason Albert, City Council Member Place 6 Jerome Hudson
No:	None
Absent:	None
Abstained:	None

Consent Agenda

1. Approve Preliminary Plat for Meridiana Detention Reserve "B-2";
   Being a Subdivision of 11.14 acres, consisting of 1 Block and 1 Reserve, out of the Oliver Hall Survey, A-203. City of Manvel, Brazoria County, Texas.

2. Approve Preliminary Plat for Meridiana Detention Reserve "C-2";
   Being a Subdivision of 4.43 acres, consisting of 1 Block and 1 Reserve, out of the Oliver Hall Survey, A-203. City of Manvel, Brazoria County, Texas.

3. Approve Preliminary Plat for Meridiana Unit 13 Open Space;
   Being a Subdivision of 29.1 O acres, consisting of 1 Block and 1 Reserve, out of the Oliver Hall Survey, A-203. City of Manvel, Brazoria County, Texas.

4. Acceptance of the 2021 Police Department Racial Profiling Report.

5. Acceptance of infrastructure improvements for Lakeland Section 5 and release the associated maintenance bonds.

6. Acceptance of the infrastructure improvements for Pomona Section 18 to begin the two-year Maintenance Period.

7. Acceptance of the infrastructure improvements for Pomona Section 23 to begin the two-year Maintenance Period.

8. Acceptance of the infrastructure improvements for Pomona Parkway Phase 5 to begin the two-year Maintenance Period.

9. Acceptance of the meeting minutes to date.

Council Member Dan Davis made the motion to approve the consent agenda. Council Member Jerome Hudson seconded the motion.
The motion carried with a vote: 7/0

Yes:	Mayor Debra Davison, City Council Member Place 1 Larry Akery, City Council Member Place 2 Lorraine Hehn, City Council Member Place 3 Niccole Tyson, City Council Member Place 4 Dan Davis, City Council Member Place 5 Jason Albert, City Council Member Place 6 Jerome Hudson
No:	None
Absent:	None
Abstained:	None

Executive Session

City Council will convene into Executive Session pursuant to Texas Government Code, Section 551.071: "Consultation with Attorney" to discuss the following:

Discuss demand letter from Brazoria County MUD #61

Mayor Davison convened the meeting into executive session at 8:31 p.m.

Mayor Davison reconvened the meeting out of executive session at 8:50 p.m.

No action was taken during executive session.

Mayor and Council Comments

Adjourn

Council Member Dan Davis made the motion to adjourn. Council Member Jerome Hudson seconded the motion.
The motion carried with a vote: 7/0

Yes:	Mayor Debra Davison, City Council Member Place 1 Larry Akery, City Council Member Place 2 Lorraine Hehn, City Council Member Place 3 Niccole Tyson, City Council Member Place 4 Dan Davis, City Council Member Place 5 Jason Albert, City Council Member Place 6 Jerome Hudson
No:	None
Absent:	None
Abstained:	None

The meeting adjourned at 8:50 p.m.

CERTIFICATION

DEBRA DAVISON, MAYOR
CITY OF MANVEL, TEXAS

TAMMY BELL, CITY SECRETARY
CITY OF MANVEL, TEXAS