



# CITY OF BLUE RIDGE

## Request to be placed on the Agenda

Date May 4, 2022

Please use this if you would like to submit a request to be placed on the Regular Scheduled City Council Meeting. The Mayor sets the Agenda and could contact you for more information. This is not a guarantee that you will be placed on the requested agenda.

Name Lori Boling  
 Address 10895 CR 504 / PO Box 69 Blue Ridge Tx 75424  
 Contact Number 214-931-2330 Email brrcbod@gmail.com  
 Property Address 10895 CR 504 Blue Ridge Tx 75424  
 Company/Organization Blue Ridge Riding Club & Rodeo  
 Will a representative be at the meeting? yes no Name no

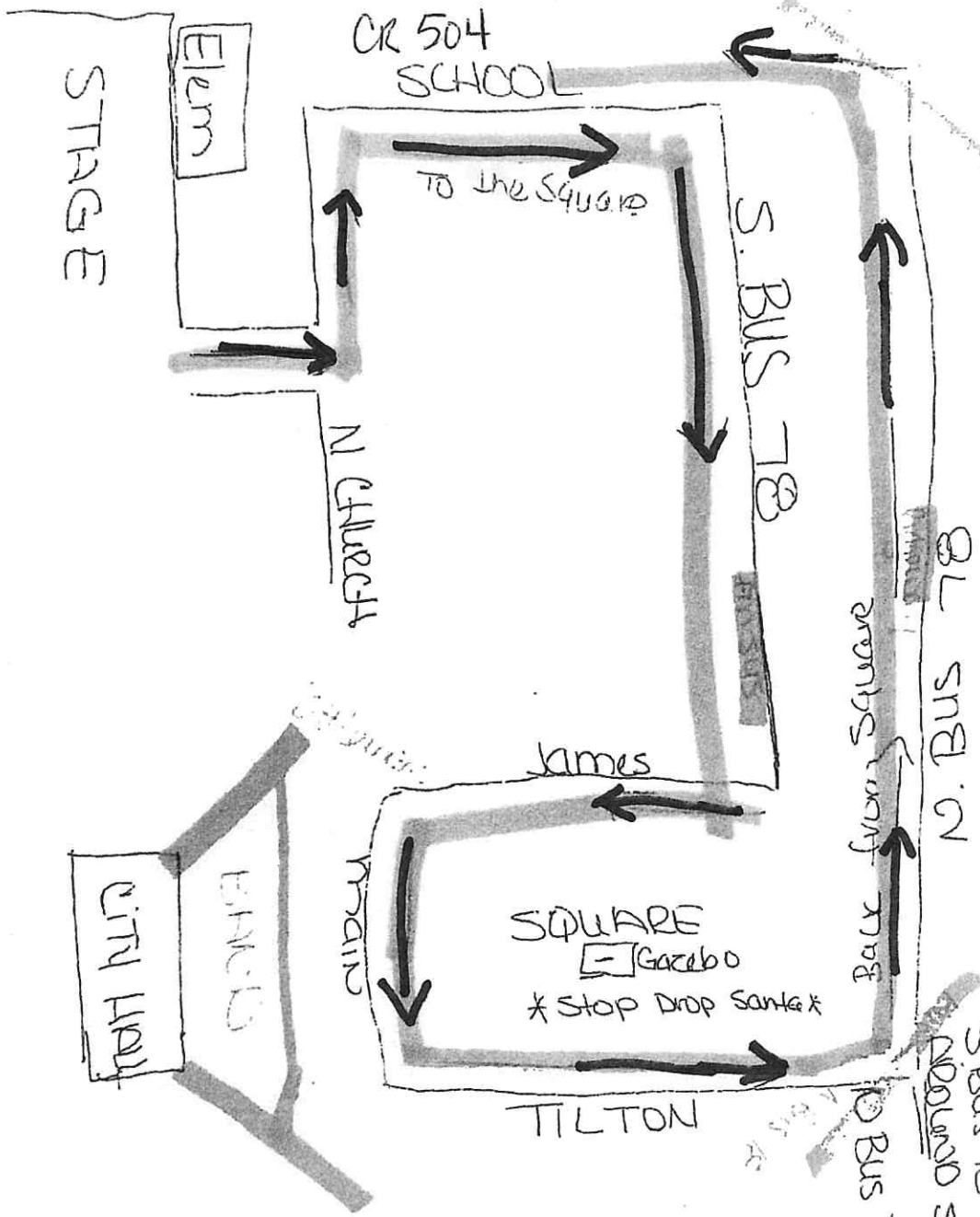
Agenda Request:

Approval for Rodeo kick off parade on Friday, July 8, 2022. - Start 530pm.

Mayor's Decision: Yes/No \_\_\_\_\_ Month to be placed on \_\_\_\_\_

Mayor's Signature \_\_\_\_\_

|                                   |      |               |
|-----------------------------------|------|---------------|
| Date Received in Office           | Time | City Employee |
| Date Notified of Mayor's Decision | Time | City Employee |



\* PARADE ROUTE

N. Church to School

School to S. Bus 78

S. Bus 78 to square

around square

\* Bus 78 to school \*

**LEGAL NOTICE  
PUBLIC HEARING**

A First Public Hearing of the City of Blue Ridge City Council for Tuesday, May 10, 2022 at 7:00pm at the Blue Ridge Community Center located at 200 W. Tilton to receive public comments and to hear the request for a Final Plat known as Hidden Hills, an addition located on County Road 584 and extending to Private Road 5002, also known as Abstract A0492 William T Jackson Survey, Tract 26, containing 14.547 acres; replatting into 10 lots and also located within the Extra Territorial Jurisdiction of the City of Blue Ridge.

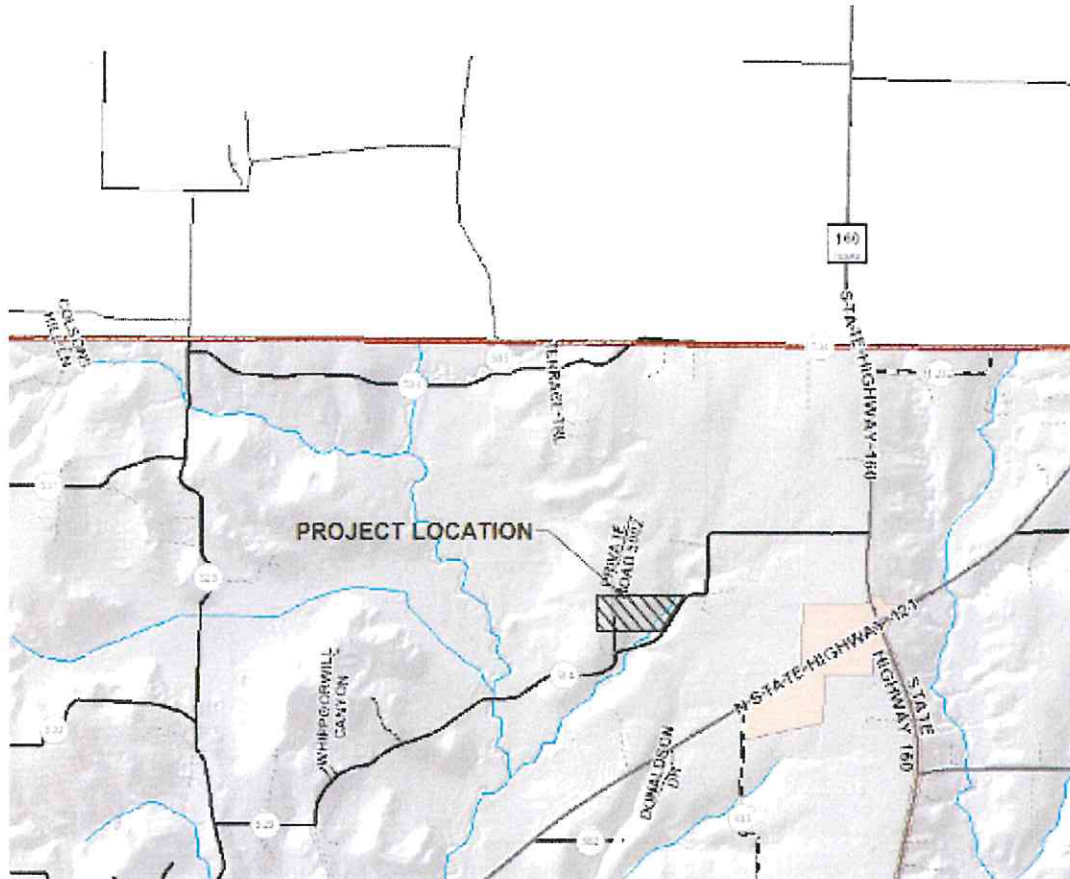
This hearing is open to any interested persons. Opinions, objections and/or comments relative to this matter may be expressed in writing or in person at the hearing.

~~~~~  
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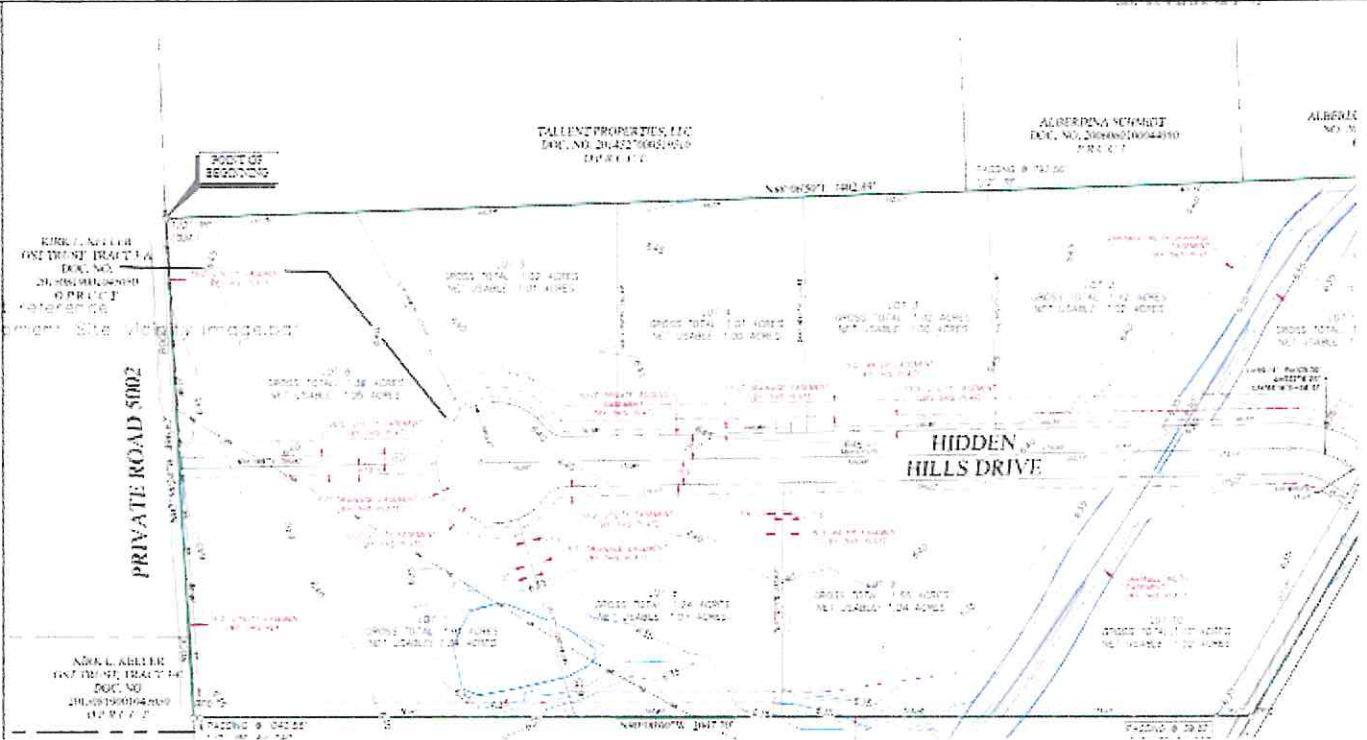
# CITY OF BLUE RIDGE



200 S Main Street ~ Blue Ridge, Texas 75424  
(972) 752-5791 ~ Fax (972) 752-9160



# CITY OF BLUE RIDGE

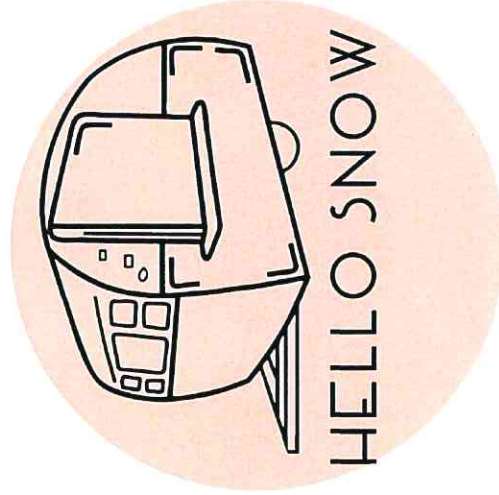


200 S Main Street ~ Blue Ridge, Texas 75424  
(972) 752-5791 ~ Fax (972) 752-9160

Hello Snow offers a wide variety of flavors and fun toppings to make your snow cone experience one of a kind!

All of our syrup is made in-house using 100% real cane-sugar and fruit concentrate.

Our biodegradable bowls really change the game when enjoying a snowcone by limiting spills and maximizing snow cone size!



100%  
Mobile



# The Prairie at Blue Ridge



FM1377

PHASE 1

PHASE 2

PHASE 2

PHASE 3

3-Mile Walking Trail



-  Park / Green Space
-  Amenity Center
-  Fire Station
-  Future Commercial

**PROFESSIONAL SERVICES AGREEMENT**  
**(Blue Ridge North)**

This Professional Services Agreement (this "**Agreement**"), effective as of the 27th day of April, 2022, (the "**Effective Date**"), is made and entered into by and between the **City of Blue Ridge, Texas**, a Texas general law municipality organized and operating pursuant to its ordinances and the laws of the State of Texas (the "**City**"), and **GLA Ventures, LLC**, a Texas limited liability company (the "**Company**" or "**Developer**"), the developer of certain Property described below and located partially in the City limits and partially in the extra territorial jurisdiction ("**ETJ**") of the City.

**WHEREAS**, the Developer seeks to develop, and obtain development rights with respect to, a planned development to be developed on approximately [REDACTED] acres of land which is located partially in the City limits and partially in the ETJ of the City of Blue Ridge, (the "**Project**"), which land is described on **Exhibit "A"** attached hereto (the "**Property**"); and

**WHEREAS**, the City and the Developer acknowledge that the development will require the City to retain independent, third-party consultants to provide professional services relating to the Project including, but not limited to, public improvement district ("**PID**") services, engineering services, and legal services determined by the City in its sole judgment (collectively, the "**Professional Services**"), which will be needed to (i) assess the City's current ordinances, and potentially draft new ordinances related to the Project, (ii) assess Project infrastructure needs and demands, including traffic needs and demands, City services needs and demands, and water and wastewater infrastructure needs and demands, and (iii) assess PID and legal issues that will be associated with or necessitated by the possible development of the Property, including, but not limited to, the negotiation of a development agreement for the Project, the creation of a PID encompassing the Property and the associated issuance of revenue bonds ("**PID Bonds**") secured by assessments levied against specially-benefitted property within the PID; and

**WHEREAS**, the Developer hereby agrees to pay for Professional Services provided by the consultants listed on **Exhibit "B"** and by additional consultants approved in writing by the Developer (collectively, the "**Consultants**") subject to the terms of this Agreement; and

**WHEREAS**, the Parties acknowledge that all of the costs paid by the Developer pursuant to the terms of this Agreement shall be considered reimbursable PID costs to the extent such costs are eligible PID costs under the applicable statutes; and

**WHEREAS**, the City Council of the City, by and through this Agreement, shall maintain sufficient controls to ensure that the public purpose and best interests of the City are carried out.

**NOW THEREFORE**, in consideration of the mutual benefits and promises contained herein and for other good and valuable consideration (including the payment of the Developer to the City of \$100.00 cash), the receipt and sufficiency of which are hereby acknowledged, the City and the Developer (collectively "**Parties**" and each individually a "**Party**") agree as follows:

**1. Recitals.** That the representations, covenants, and recitations set forth in the foregoing are material to this Agreement and are incorporated into and made a part of this Agreement.



2. **Exhibits.** All Exhibits referenced in this Agreement, and listed below, are incorporated herein for all purposes; specifically

Exhibit “A” – Property Description and Map

Exhibit “B” – Approved Consultants

3. **Payment for Professional Services.** Subject to the terms and provisions of this Agreement, the Developer shall be responsible for payment of all invoices of Consultants for Professional Services relating to the City’s review of the Project’s impact on the City's subdivision and zoning plans, infrastructure needs and demands, ordinance creation and revisions, and other on-site and off-site matters necessitated by the proposed development of the Property, the creation of the PID and the levy of assessments against property within the PID in accordance with a service and assessment plan, and the financing of certain infrastructure for the development of the Property, including through the issuance and sale of PID Bonds, as follows:

- (a) The Consultants will invoice the City approximately every thirty (30) days with a detailed billing statement of all Professional Services rendered in accordance with this Agreement, excluding invoices for Professional Services rendered prior to the Effective Date.
- (b) Deposits – Initial Payment and Replenishment. Within thirty (30) days after the execution of this Agreement, the Developer shall deliver to the City funds in the amount of THIRTY THOUSAND AND NO/100 DOLLARS (\$30,000.00) (“**Initial Payment**”) to be used as a deposit towards the payment of total costs incurred for Professional Services for City Consultants. The City agrees to hold the Initial Payment in a separate, interest-bearing fund (the “**Escrow Fund**”) maintained by the City which may only be used by the City for payment of the Professional Services related to the Project. Developer shall pay and subsequently replenish amounts on deposit in the Escrow Fund by delivering additional funds in \$10,000 increments to City within ten (10) business days of written notice from City that the balance in the Escrow Fund has decreased to less than \$2,000. The parties understand and agree that if the Developer fails to pay and/or make replenishment payment(s) in accordance with the requirements of this **Section 3**, all work by City Consultants shall cease until such time as Developer deposits funds sufficient to comply with its obligations under this Section. The Initial Payment and all other funds delivered to the City by the Developer pursuant to this **Section 3(b)** shall be used by the City solely to pay for Professional Services as described in this Agreement.
- (c) Within five (5) business days after receipt of a request from Developer for copies of invoices received from a Consultant, the City shall forward such invoice to the Developer. The Developer shall have ten (10) days from receipt during which to review each invoice and to make objections. Attorney-client privileged information may be redacted from invoice by the City or the City Attorney. If the Developer objects to any portion of an invoice, the City, the Developer and the Consultant shall attempt to resolve the dispute within a reasonable period of time.

4. **Effect of Agreement.** This Agreement shall not: (a) confer upon the Developer any vested rights or development rights with respect to the Property; (b) bind or obligate the City to approve any documents or agreements related to the development of the Property; or (c) be considered an impact fee.

5. **Impact Fees.** Nothing in this Agreement, the Agreement itself, and the dealing between the Parties shall be considered an impact fee.

6. **Termination.** Either Party may terminate this Agreement for any reason or for no reason by providing at least five (5) days written notice of termination. Termination of this Agreement shall be the sole and exclusive remedy of the City or the Developer, as the case may be, for any claim by either Party of any breach of this Agreement by the other Party. The City shall be entitled to pay Consultants for all Professional Services incurred through the date of termination; however, any excess funds remaining after such payments have been made shall be promptly (and in no case more than forty-five (45) days following the date of termination) refunded to the Developer. Notwithstanding any other provision of this Agreement to the contrary, the obligation to repay such excess funds to the Developer in the event of a termination shall survive any termination of this Agreement, and the Developer does not release or discharge its right to such excess funds. Section 5 of this Agreement shall survive termination for thirty years. Notwithstanding the foregoing, this Agreement shall automatically terminate upon the collection of the first annual installment of PID assessments associated with the Property if this Agreement is still in effect at such time.

7. **Entire Agreement.** This Agreement contains the entire agreement between the Parties with respect to the provision of Professional Services in connection with the development of the Property.

8. **Amendment.** This Agreement may only be amended by written instrument signed by the Developer and the City.

9. **Successors and Assigns.** Neither the City nor the Developer may assign or transfer their interest in the Agreement without prior written consent of the other Party.

10. **Notice.** All notices required or contemplated by this Agreement (or otherwise given in connection with this Agreement) (a "Notice") must be in writing, shall be signed by or on behalf of the Party giving the Notice, and shall be effective as follows: (a) on or after the 10th business day after being deposited with the United States mail service, Certified Mail, Return Receipt Requested with a confirming copy sent by E-mail; (b) on the day delivered by a private delivery or private messenger service (such as FedEx or UPS) as evidenced by a receipt signed by any person at the delivery address (whether or not such person is the person to whom the Notice is addressed); or (c) otherwise on the day actually received by the person to whom the Notice is addressed, including, but not limited to, delivery in person and delivery by regular mail (with a confirming copy sent by E-mail). Notices given pursuant to this section shall be addressed as follows:

**DEVELOPER:**

GLA Ventures, LLC  
ATTN: Mitchell Fielding  
4232 Ridge Rd. Ste. 104  
Heath, Texas 75032  
Email: mitchell@glaventures.net

with copies to:

Shupe Ventura, PLLC  
ATTN: Corey Admire  
9406 Biscayne Blvd.  
Dallas, Texas 75218  
Email: corey.admire@svlandlaw.com

**CITY:**

City of Blue Ridge, Texas  
200 S. Main St.  
Blue Ridge, Texas 75424

With a copy to:

Messer, Fort & McDonald, PLLC  
Attn: Wm. Andrew Messer  
6371 Preston Road, Suite 200  
Frisco, Texas 75034  
Email: andy@txmunicipallaw.com

**11. Non-Recordation.** This Agreement shall not be recorded. If the City or its Consultants files this Agreement of record, this Agreement shall automatically terminate as of the date of recordation, and no notice of termination shall be required by the Developer. If the Developer files this Agreement of record, the Agreement shall automatically terminate five (5) days following receipt by the City of a filed-stamped copy of the recorded Agreement. Each Party shall deliver a file-stamped copy of the recorded Agreement within one (1) business day of recordation.

**12. Interpretation.** Regardless of the actual drafter of this Agreement, this Agreement shall, in the event of any dispute over its meaning or application, be interpreted fairly and reasonably and neither more strongly for or against either Party

**13. Applicable Law.** This Agreement is made, and shall be construed in accordance with the laws of the State of Texas and venue shall lie in only Collin County, Texas.

**14. Severability.** In the event any portion or provision of this Agreement is illegal, invalid, or unenforceable under present or future law, then and in that event, it is the intention of the Parties hereto that the remainder of this Agreement shall not be affected thereby, and it is also the intention of the Parties to this Agreement that in lieu of each clause or provision that is found to be illegal, invalid or unenforceable, a provision be added to this Agreement which is legal, valid and enforceable and is as similar in terms as possible to the provision found to be illegal, invalid or unenforceable.

**15. Counterparts.** This Agreement may be executed in multiple counterparts, each of which shall be considered an original, but all of which shall constitute one instrument.

**16. Authority for Execution.** The City hereby certifies, represents, and warrants that the execution of this Agreement is duly authorized and the Mayor has full authority to execute this Agreement and bind the City to the same. The Developer hereby certifies, represents, and warrants that the individual executing this Agreement on behalf of the Developer is duly authorized and has full authority to execute this Agreement and bind the Developer to the same.

**[THE BALANCE OF THIS PAGE HAS BEEN INTENTIONALLY LEFT BLANK]**

IN WITNESS WHEREOF, this Professional Services Agreement has the Effective Date as of the day and year first written above.

**CITY:**

**CITY OF BLUE RIDGE, TEXAS**

By: \_\_\_\_\_  
Rhonda Williams, Mayor

**ATTEST:**

\_\_\_\_\_  
Edie Sims, City Secretary

**APPROVED AS TO FORM:**

\_\_\_\_\_  
City Attorney

STATE OF TEXAS                   §  
                                                 §  
COUNTY OF COLLIN           §

This instrument was acknowledged before me on the \_\_\_\_ day of \_\_\_\_\_, 2022, by Rhonda Williams, Mayor of the City of Blue Ridge, on behalf of the City.

\_\_\_\_\_  
**Notary Public, State of Texas**  
**(Seal)**

**DEVELOPER:**

GLA VENTURES, LLC  
a Texas limited liability corporation

By: \_\_\_\_\_  
Name, Title

STATE OF TEXAS           §  
                                          §  
COUNTY OF \_\_\_\_\_ §

This instrument was acknowledged before me on the \_\_\_ day of \_\_\_, 2022, by \_\_\_\_\_, \_\_\_\_\_ (title) of GLA Ventures, LLC, a Texas limited liability corporation, on behalf of said corporation.

\_\_\_\_\_  
**Notary Public, State of Texas**  
**(Seal)**

**EXHIBIT "A"**  
**PROPERTY DESCRIPTION AND MAP**

LEGAL DESCRIPTION (approx. | | acres)

**EXHIBIT "B"**  
APPROVED CONSULTANTS AND RATES

|                     |                                                                                                                                                                         |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| City's Attorney     | Billing Rate \$350 per hour for principal or senior associate; \$275 per hour for associates; \$85 per hour for paralegals. Opinion letters for bonds will be separate. |
| City's Engineer     | As reasonably determined by City.                                                                                                                                       |
| City's Bond Counsel | As reasonably determined by City.                                                                                                                                       |
| Financial Advisor   | As reasonably determined by City.                                                                                                                                       |
| PID Administrator   | As set forth in an executed contract for PID administration services approved by the City.                                                                              |



INTERLOCAL COOPERATION AGREEMENT FOR PLATTING AND SUBDIVISION REGULATION IN THE  
EXTRATERRITORIAL JURISDICTION OF THE CITY OF BLUE RIDGE

This Interlocal Cooperation Agreement is entered by and between Collin County, Texas (hereinafter "County") and the City of Blue Ridge, Texas (hereinafter "City") on the date shown by the last to sign below.

I.

Plats – Generally

1.1 Authority. The City and the County are authorized to enter into this Agreement pursuant to Chapters 242 and 791 of the *Texas Local Government Code*. This Agreement is specifically made under Section 242.001 (d)(4) of the Texas Local Government Code.

1.2 Purpose. The purpose of this Agreement is to establish which entity is in control over platting in the City's extraterritorial jurisdiction (hereinafter "ETJ"); to provide for unified regulations governing platting and subdivision development in the ETJ; and to provide for cooperation between the City and the County with regard to the ETJ.

1.3 Platting. The City is authorized to:

- a) accept plat applications for land located within the ETJ;
- b) collect the City's plat application fee; and
- c) provide applicants with a response indicating the City's decision on plat applications.

The City has the sole authority to make the determination on a plat application for land within the ETJ.

1.4 Plats to Which Agreement Applies. All preliminary plats, amended plats, conveyance plats, minor plats, final plats, and replats of property located inside the City's Extraterritorial Jurisdiction (ETJ) and where either the City or County would have jurisdiction under any applicable law shall be subject to the requirements of this Agreement.

1.5 Exception for Bifurcated Developments. If a development crosses over the ETJ boundary into an unincorporated area outside of the ETJ, platting and subdivision regulation shall be through the City if the majority of the land is within the ETJ, and through the County if the majority of the development's land is outside the ETJ in an unincorporated area.

1.6 Lots Five (5) Acres or Larger. If the division of land would result in all lots containing five (5) or more acres, and each lot has access to an existing street and no additional public improvements are being dedicated, the County platting requirements shall be applied by the City.

1.7 On-Site Sewage Facilities (OSSF). The County retains exclusive jurisdiction to administer and enforce the County's on-site sewage facility (OSSF) regulations on property in the City's Extraterritorial Jurisdiction (ETJ). Approval of an on-site sewage facility (OSSF) should take place before the submission of a *Preliminary Plat* as such approvals can affect the configuration of lots, drainage, easements, and other development related items. An administratively complete submission of a *Preliminary Plat* or *Final Plat* must include proof of approval of a proposed on-site sewage facility (OSSF) by the *County*. This approval shall also be noted in the *Plat Certifications* appended to the *Final Plat*

1.8 Roads. A dedication of road right-of-way or easements in a subdivision plat approved by the City shall not result in an acceptance of roads by the County; however, the dedication of the right-of-way to the public is required for

the County to lawfully consider acceptance of a road for maintenance. Any approvals of roadway design or of a road's final completion by the City or the County shall not constitute acceptance of the road for County maintenance purposes. Roads will be considered for County maintenance only pursuant to the request for County maintenance process contained in Section 1.10, *Acceptance of Roadways for County Maintenance*, of the *Collin County Subdivision Regulations*. The following are acknowledged and agreed:

- (a) A road that contains a sidewalk within the road right-of-way will not be accepted by the County for maintenance, unless the following Plat Note is contained on the Final Plat—

**Collin County, Texas has not and will not accept the sidewalks shown on this plat for maintenance. Maintenance of the sidewalks shall be the responsibility of the Homeowners' Association ("H.O.A."), or if there is no H.O.A., or the H.O.A. ceases to exist, maintenance shall be the responsibility of each lot owner for the portion of any sidewalk running along the lot owner's lot. By accepting a deed referencing this Plat the grantee agrees to the foregoing and binds the grantee's heirs, successors and assigns thereto.**

- (b) The County will not accept sidewalks, drainage improvements, or public infrastructure not associated with a road for maintenance. [*Caveat: ditches and drainage facilities related to roadways will be considered for maintenance*];
- (c) To be eligible for acceptance into the *County Road System* for maintenance a road must be constructed to at least the County's road standards as contained in the *Collin County Roadway Standards*; and
- (d) To be eligible for acceptance into the *County Road System* for maintenance a road must not be gated or obstructed from public use.

1.9 Floodplain. The County will continue to be responsible for the enforcement of floodplain regulations within the City's Extraterritorial Jurisdiction (ETJ) in accordance with the County's Floodplain Management Regulations. Any plans or subdivision plats submitted to the City for review and approval shall be required to meet the City's Design Criteria and Construction Standards manual and any adopted flood hazard damage prevention and control regulations. The Plat must also comply with all County Floodplain regulations with regard to required surveys, required studies, and infrastructure design. The floodplain shall be clearly shown on the plat.

1.10 Thoroughfare Plan. In the case that a roadway is shown on the City's Thoroughfare Plan to traverse a proposed subdivision, the right-of-way for that thoroughfare must be dedicated as part of the subdivision plat as per the City's regulations. In the case that a roadway is shown on the County's Thoroughfare Plan to traverse a proposed subdivision, the width of the right-of-way must be in accordance with that required in the most recent update of the *Collin County Mobility Plan*.

1.11 Adequate Public Utilities/Facilities. It shall be the responsibility of the developer or applicant to provide adequate public utilities necessary to serve the property. Proof of adequate public utility services must be provided with the subdivision plat, and all easements for the utilities shall be clearly depicted on the subdivision plat as required by the City's Subdivision Regulations; except that on-site sewer facilities (OSSF) must be approved by the County as set forth elsewhere in this Agreement.

1.12 Drainage. The City's drainage regulations shall govern subdivisions in the ETJ. Drainage facilities and drainage easements must be shown on the subdivision plat. The Final Plat shall contain the following plat note:

**Neither the City of Blue Ridge nor Collin County will accept drainage facilities and easements for maintenance. Such maintenance shall be the obligation of the homeowners' association or, if no homeowners' association, shall be the obligation of the lot owner on whose lot the**

**facility or easement is located or to which the lot owner's lot is adjacent. By accepting a deed referencing this Plat the grantee agrees to the foregoing and binds the grantee's heirs, successors and assigns thereto.**

1.13 Processes and Procedures. The processes and procedures for platting shall be those established by the City except as otherwise provided herein.

1.14 Notification of Application for a Subdivision Plat or Engineering Plans. The City shall notify the County upon receiving an application for the approval of a subdivision plat or engineering plans by sending a digital copy of the application and the subdivision plat or engineering plans to the County Engineering Department within two (2) business days of acceptance of the application.

1.15 Approval or Denial of a Subdivision Plat or Engineering Plans. Subject to the County being previously provided with the proposed subdivision plat and any additional plans required by this Agreement and having the opportunity to provide comments in accordance with the terms of this Agreement, the subdivision plat and/or plans may be submitted to the City Council. The City shall contact the County concerning the status of a subdivision plat or engineering plans no later than 15 days after the City Council acts on a subdivision plat or staff takes administrative action on engineering plans. If a subdivision plat is approved and subsequently filed by the City, then the City shall provide the County with a digital file of the subdivision plat tying it to a minimum of two (2) GPS points in a County approved digital format within ten (10) working days.

1.16 Variances. If a variance is requested, the City shall determine whether or not the variance is granted pursuant to its variance procedures; however, in no circumstance may the variance release the Applicant from a regulation for which the County has retained sole authority (*including the standards required for accepting a road for County maintenance, OSSF, or Floodplain development*).

1.17 Plat Notes and Certifications. The City will use its standard plat notes as revised for the facts and circumstances. **The City must include the plat notes and certifications expressly required by this Agreement.**

## II.

### Subdivision Regulations

2.1 City's Subdivision Regulations Generally Control. The City's subdivision regulations will generally control development in the ETJ except as otherwise expressly provided herein.

2.2 Design and Construction Standards. Except as expressly provided herein, the City's design and construction standards shall exclusively apply to the review of all subdivision infrastructure improvements except OSSF.

2.3 Exceptions. If not addressed by the City's subdivision regulations the following standards shall apply which are based on the County's subdivision regulations, the Collin County Thoroughfare Plan, and Chapter 232 of the *Texas Local Government Code*:

a) Building Setback Requirements Adjacent to a Public Street. Building setbacks shall be indicated on all subdivision plats where any portion of a lot or tract of land is adjacent to a street. Based on the size of the adjacent roadway, the following minimum building setbacks are required: [1] 50-feet from the front property line on all properties directly adjacent to a major thoroughfare or highway, and [2] 25-feet from all properties directly adjacent to any other public roadway.

b) Minimum Lot Frontage. All lots shall be required to have frontage on or access to a public roadway. Along existing County roadways, a minimum of 100-feet of lot frontage shall be required. For lots along roadways other than

existing County roadways, the road frontage shall be reasonable for the proposed lot size, and provide sufficient support for ingress, egress, and turning for emergency vehicles.

c) Streets and Roadways.

1) Thoroughfare Plan. In the case that a roadway is shown on the City's Thoroughfare Plan to traverse a proposed subdivision, the right-of-way for that thoroughfare must be dedicated as part of the subdivision plat as per the City's regulations. In the case that a roadway is shown on the County's Thoroughfare Plan to traverse a proposed subdivision, the width of the right-of-way must be in accordance with that required in the most recent update of the *Collin County Mobility Plan*.

2) Right-of-Way. Unless the City requires a wider right-of-way, the minimum right-of-way required for roads developed in the Extraterritorial Jurisdiction (ETJ) shall be in accordance with Section 1.04, *Roadway & Pavement Selection*, of the *Collin County Roadway Standards*, and which are summarized as follows:

| Roadway Classification | Abbreviation | Right-of-Way <sup>1</sup> |
|------------------------|--------------|---------------------------|
| Rural Residential      | RR           | 60'                       |
| Urban Residential      | UR           | 50'                       |
| Rural Collector        | RC           | 60'                       |
| Urban Collector        | UC           | 50'                       |

Notes:

*Private streets shall be subject to the same right-of-way and classification requirements as public streets.*

3) Street and Roadway Acceptance. Both the City and the County shall be responsible for accepting that a street or roadway is complete in accordance with the approved plans and specifications. The acceptances will be issued by the City's Community Services and Building Safety Department and the County's Engineering Department. Acceptance of a street or roadway as complete in accordance with the approved plans and specifications is **not** an acceptance of the roadway or street for County maintenance. A road will not be considered for County maintenance until two (2) years after completion and correction of any defects existing at the end of that period; and then will only be considered for maintenance pursuant to the request for maintenance process in Section 1.10, *Acceptance of Roadways for County Maintenance*, of the Collin County Subdivision Regulations.

2.4 Lot Sales. The final plat must be recorded in the official public records of the Collin County Clerk's Office prior to any lots being sold.

2.5 No Construction on Lots until Subdivision Infrastructure/Public Improvements Completed. Unless authorized by the City for areas of a development where the subdivision infrastructure/public improvements have been completed, no construction on lots may take place until the subdivision infrastructure/public improvements for the entire subdivision have been accepted as complete.

2.6 Permitting. Nothing herein shall expand the City's permitting authority in the ETJ beyond the authority, if any, provided by Texas law.

2.7 Density. Nothing herein is intended to regulate density of development. [Note. OSSF requirements may affect lot size and density].

### III.

#### Inspections and Bonds

3.1 Performance Bond or Alternative Acceptable Financial Guaranty. Prior to starting work on the subdivision infrastructure/public improvements, the Applicant must file with the City a performance bond or other financial guarantee acceptable to the City that guarantees the work will be completed in accord with the plans and specifications. The time for completion may not exceed two (2) years. The City shall be the obligee/payee. The amount of the bond or financial guarantee is based on the design engineer's cost estimate to construct the subdivision infrastructure/public improvements unless the estimate is disputed, in which case the amount of the bond or other financial guarantee will be based on an estimate of costs prepared by the City's chosen consultant. The developer and/or property owner (i.e. the Applicant) shall be responsible for all costs incurred by the City's chosen consultant.

3.2 Warranty and Maintenance Bond Upon Acceptance as Complete. A *Warranty and Maintenance Bond* must be provided by the Applicant that meets the requirements of Section 1.09, *Warranty and Securing Maintenance Obligation*, of the *Collin County Subdivision Regulations*. The City and County shall be named as beneficiaries/obligees on the *Maintenance Bond*. The County has the authority to make a claim on the bond.

3.3 Inspections During Construction. The City shall be responsible for the inspection and approval over public improvements within the right-of-way and/or public easements for all construction projects subject to the terms of this Agreement. The City inspector may issue a stop-work order if the applicable construction standards are not being met, or as deemed necessary by the City and/or County. The City inspector shall request and receive as-built drawings for all construction projects subject to the terms of this Agreement and shall provide notice to the County when construction of all public improvements have been completed within ten (10) days after inspection. The developer and/or property owner (i.e. the Applicant) shall be responsible for all costs incurred by the City's inspector, subject to the City's standard fee schedule. The County Engineering Department will be notified of inspections and may participate in the inspections. In addition, if any preconstruction meetings are held, the County Engineering Department will be notified and given the opportunity to participate.

3.4 Inspection for Acceptance as Complete. Both the City's inspector and the County shall inspect the work before it will be accepted as complete. If the roads do not meet the minimum standards of the County, the County reserves the right not to accept the roads as complete. Both the City and the County must accept the road(s) as complete for completion to be certified.

3.5 Warranty Inspection. During the warranty period and again prior to the end of the warranty period the County will inspect the work. If the roads have defects or do not meet County standards either the Applicant must do the work to correct the defects or bring them within County standards or the County will make a claim on the maintenance bond. A road that does not meet the County standards will not be accepted for County maintenance.

### IV.

#### Term of Agreement

4.1 Effective Date. This Agreement shall commence on the date that it is formally and duly signed and executed by both the City and County and shall be valid for a period of one (1) year. Thereafter, this Agreement shall automatically renew annually, unless terminated as provided herein.

4.2 Renewal. The renewal of this Agreement shall be automatic upon the expiration of the preceding term unless the City or County provides written notice to the other governmental agency of its desire to not renew the agreement. Written notice shall be provided a minimum of 90-days prior to the expiration of the current term. Upon termination of this Agreement, neither the City nor the County shall have any obligations to the other entity under this Agreement,

except with respect to payment for services already rendered under this Agreement but not yet paid. Should the Agreement be terminated or not renewed, the City and the County agree to renegotiate a new agreement in good faith for approval by each Party within 120 days of the date of termination of the Agreement.

V.

General Provisions.

- (1) General Administration. The City and County shall be responsible for designating their respective representatives to generally administer the requirements of this Agreement.
- (2) Alteration, Amendment, and/or Modification. This Agreement may not be altered, amended, and/or modified by any official, agent, employee or representative of the City or County unless both the City or County notify the other entity in writing and both governing bodies agree to the alteration, amendment, and/or modification.
- (3) Notice. All notices sent pursuant to the requirements of this Agreement shall be in writing and must be sent by registered or certified mail, postage prepaid, by hand delivery, or commercial delivery service. Notices sent pursuant to this Agreement will be sent to the following:

Collin County Engineering Department

Collin County Director of Engineering  
Collin County Engineering Department  
4690 Community Avenue, Suite 200  
McKinney, Texas 75071

City Secretary's Office

City Secretary  
City of Blue Ridge  
200 S Main  
Blue Ridge, TX 75424

Note: When notices sent pursuant to this Agreement are mailed via registered or certified mail, notices shall be deemed effective three (3) days after deposit in a U.S. mailbox or at a U.S. post office.

- (4) Severability. If any provision of this Agreement is found to be invalid, illegal, or unenforceable, such invalidity, illegality, or unenforceability will not affect the remaining provisions of the Agreement.
- (5) Breach. The failure of either party to comply with the terms and conditions of this Agreement will constitute a breach of this Agreement. Either the City or County will be entitled to any and all rights and remedies allowed under the State of Texas law for any breach of this Agreement by the other entity.
- (6) Non-Waiver. The waiver by either the City or County of a breach of this Agreement will not constitute a continuing waiver of such breach or of a subsequent breach of the same or a different provision. Nothing in this Agreement is intended by either party to constitute a waiver of any immunity for suit or liability to which it is entitled under applicable law.
- (7) Entire Agreement. This Interlocal Cooperation Agreement constitutes the entire Agreement between the City and the County. No other agreement, statement, or promise relating to the subject matter of this Agreement, and which is not contained in this Agreement or incorporated by reference in this Agreement will be valid or binding.

- (8) Terms Used in Document. As used in this Agreement, the terms *Interlocal Cooperation Agreement*, *Interlocal Agreement*, *Agreement*, and *Contract* are synonymous.
- (9) Non-Defined Terms. If not specifically defined in this Agreement, words and phrases used in this Agreement will have their ordinary meaning as defined by common usage.
- (10) Current Funds. All amounts, if any, expended by the City or County in the preparation and administration of this Agreement shall be paid from current, available funds.
- (11) Effective Date. To be effective this Agreement must be approved by the applicable governing bodies of the City and County.
- (12) Venue. The venue of any action arising out of this Agreement shall be in a court of competent jurisdiction sitting in Collin County, Texas.
- (13) Application. The regulations as set forth in this Agreement apply only to subdivision applications and engineering submittals submitted after the effective date of this Agreement.

**SIGNATURES AND ATTESTS**

COLLIN COUNTY, TEXAS

EXECUTED THIS THE \_\_\_ DAY OF \_\_\_\_\_, 2022.

By: \_\_\_\_\_  
Honorable Chris Hill  
*Collin County Judge*

Attest: \_\_\_\_\_  
Bill Bilyeu  
*Collin County Administrator*

Date: \_\_\_\_\_

CITY OF BLUE RIDGE, TEXAS

EXECUTED THIS THE \_\_\_ DAY OF \_\_\_\_\_, 2022.

By: \_\_\_\_\_  
*City Manager*

Attest: \_\_\_\_\_  
*City Secretary*

Date: \_\_\_\_\_



**CITY OF BLUE RIDGE  
RESOLUTION 2022-0510-001**

**A RESOLUTION OF THE CITY OF BLUE RIDGE, TEXAS FINDING THAT TEXAS-NEW MEXICO POWER COMPANY'S APPLICATION FOR APPROVAL TO AMEND ITS DISTRIBUTION COST RECOVERY FACTOR TO INCREASE DISTRIBUTION RATES WITHIN THE CITY SHOULD BE DENIED; AUTHORIZING PARTICIPATION WITH TNMP CITIES; AUTHORIZING THE HIRING OF LEGAL COUNSEL AND CONSULTING SERVICES; FINDING THAT THE CITY'S REASONABLE RATE CASE EXPENSES SHALL BE REIMBURSED BY THE COMPANY; FINDING THAT THE MEETING AT WHICH THIS RESOLUTION IS PASSED IS OPEN TO THE PUBLIC AS REQUIRED BY LAW; REQUIRING NOTICE OF THIS RESOLUTION TO THE COMPANY AND LEGAL COUNSEL.**

**WHEREAS**, the City of Blue Ridge, Texas ("City") is an electric utility customer of Texas-New Mexico Power Company ("TNMP" or "Company") with an interest in the rates and charges of TNMP; and

**WHEREAS**, the Cities Served by Texas-New Mexico Power Company ("TNMP Cities") is a coalition of similarly situated cities served by TNMP that have joined together to efficiently and cost effectively review and respond to electric issues affecting rates charged in TNMP's service area in matters before the Public Utility Commission ("Commission") and the courts; and

**WHEREAS**, on or about April 5, 2022, TNMP filed with the Commission an Application for Approval to Amend its Distribution Cost Recovery Factor ("DCRF"), Commission Docket No. 53436, seeking to increase distribution rates by \$9,706,846 million annually; and

**WHEREAS**, the City of Blue Ridge will cooperate with TNMP Cities in coordinating their review of TNMP's DCRF filing with designated attorneys and consultants, prepare a common response, negotiate with the Company, and direct any necessary litigation, to resolve issues in the Company's filing; and

**WHEREAS**, all electric utility customers residing in the City will be impacted by this ratemaking proceeding if TNMP's Application is granted; and

**WHEREAS**, working with the TNMP Cities to review the rates charged by TNMP allows members to accomplish more collectively than each city could do acting alone; and

**WHEREAS**, TNMP Cities' members and attorneys recommend that members who have retained original jurisdiction over electric utility rates deny TNMP's DCRF.

**NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF BLUE RIDGE, TEXAS:**

SECTION 1. That the City is authorized to participate with TNMP Cities in Commission Docket No. 53436.

SECTION 2. That, subject to the right to terminate employment at any time, the City of Blue Ridge hereby authorizes the hiring of the law firm of Lloyd Gosselink Rochelle & Townsend, P.C. and consultants to negotiate with the Company, make recommendations to the City regarding reasonable rates, and to direct any necessary administrative proceedings or court litigation associated with an appeal TNMP's DCRF application.

SECTION 3. That the rates proposed by TNMP to be recovered through its DCRF charged to customers located within the City limits should be denied.

SECTION 4. That the Company should continue to charge its existing rates to customers within the City.

SECTION 5. That the City's reasonable rate case expenses shall be reimbursed in full by TNMP within 30 days of the adoption of this Resolution, and within 30 days of presenting monthly bills to TNMP thereafter.

SECTION 6. That it is hereby officially found and determined that the meeting at which this Resolution is passed is open to the public as required by law and the public notice of the time, place, and purpose of said meeting was given as required.

SECTION 7. That a copy of this Resolution shall be sent to Scott Seamster, Associate General Counsel, Texas-New Mexico Power Company, 577 N. Garden Ridge Blvd., Lewisville, Texas 75067, and to Thomas Brocato, General Counsel to TNMP Cities, at Lloyd Gosselink Rochelle & Townsend, P.C., P.O. Box 1725, Austin, TX 78767-1725, or [tbrocato@lglawfirm.com](mailto:tbrocato@lglawfirm.com).

**PASSED, APPROVED AND ADOPTED** on this 10<sup>th</sup> day of May, 2022.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Secretary

## **MODEL STAFF REPORT REGARDING TNMP'S DISTRIBUTION COST RECOVERY FACTOR FILING**

\*\*\*

On April 5, 2022, Texas-New Mexico Power Company ("TNMP" or "Company") filed an Application for Approval to Amend its Distribution Cost Recovery Factor ("DCRF") to increase distribution rates within each of the cities in their service area. In the filing, the Company asserts that it is seeking an increase in distribution revenues of \$9,706,846.

The resolution authorizes the City to join with the Cities Served by TNMP ("TNMP Cities") to evaluate the filing, determine whether the filing complies with law, and if lawful, to determine what further strategy, including settlement, to pursue.

### **Purpose of the Resolution:**

The purpose of the Resolution is to deny the DCRF application proposed by TNMP.

### **Explanation of "Be It Resolved" Paragraphs:**

1. This section authorizes the City to participate with TNMP Cities as a party in the Company's DCRF filing, PUC Docket No. 53436.
2. This section authorizes the hiring of Lloyd Gosselink and consultants to review the filing, negotiate with the Company, and make recommendations to the City regarding reasonable rates. Additionally, it authorizes TNMP Cities to direct any necessary administrative proceedings or court litigation associated with an appeal of this application filed with the PUC.
3. This paragraph finds that the Company's application is unreasonable and should be denied.
4. This section states that the Company's current rates shall not be changed.
5. The Company will reimburse Cities for their reasonable rate case expenses. Legal counsel and consultants approved by TNMP Cities will submit monthly invoices that will be forwarded to TNMP for reimbursement.
6. This section recites that the Resolution was passed at a meeting that was open to the public and that the consideration of the Resolution was properly noticed.
7. This section provides that TNMP and counsel for TNMP Cities will be notified of the City's action by sending a copy of the approved and signed Resolution to counsel.

Ms. Mauldin's Direct Line: (512) 322-5890  
Email: [jmauldin@lglawfirm.com](mailto:jmauldin@lglawfirm.com)

## MEMORANDUM

TO: Cities Served by TNMP ("TNMP Cities")

FROM: Thomas Brocato  
Jamie Mauldin  
Roslyn Dubberstein

DATE: April 6, 2022

RE: TNMP– Distribution Cost Recovery Factor ("DCRF") filing

**CONFIDENTIAL/ATTORNEY-CLIENT COMMUNICATION**  
**CITY ACTION REQUIRED NO LATER THAN JUNE 4, 2022**

On April 5, 2022, Texas-New Mexico Power Company ("TNMP" or "Company") filed an Application for Approval to Amend its Distribution Cost Recovery Factor. In the filing, the Company is seeking an increase in distribution revenues of \$9,706,846.

TNMP Cities has engaged the services of a consultant, Mr. Karl Nalepa, to review the Company's filing. Mr. Nalepa will review the filing and identify adjustments that should be made to the Company's request. We are recommending that Cities deny the requested relief.

The Public Utility Commission of Texas's rules allow cities 60 days to act on this application. That deadline is June 4, 2022. **Accordingly, we request that each city schedule the draft resolution provided with this memorandum for consideration at their next council meeting.**

If you have any concerns or questions, please do not hesitate to contact us. We appreciate your continued support.

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# Wastewater Management Fact Sheet

## Membrane Bioreactors

### INTRODUCTION

The technologies most commonly used for performing secondary treatment of municipal wastewater rely on microorganisms suspended in the wastewater to treat it. Although these technologies work well in many situations, they have several drawbacks, including the difficulty of growing the right types of microorganisms and the physical requirement of a large site. The use of microfiltration membrane bioreactors (MBRs), a technology that has become increasingly used in the past 10 years, overcomes many of the limitations of conventional systems. These systems have the advantage of combining a suspended growth biological reactor with solids removal via filtration. The membranes can be designed for and operated in small spaces and with high removal efficiency of contaminants such as nitrogen, phosphorus, bacteria, biochemical oxygen demand, and total suspended solids. The membrane filtration system in effect can replace the secondary clarifier and sand filters in a typical activated sludge treatment system. Membrane filtration allows a higher biomass concentration to be maintained, thereby allowing smaller bioreactors to be used.

### APPLICABILITY

For new installations, the use of MBR systems allows for higher wastewater flow or improved treatment performance in a smaller space than a conventional design, i.e., a facility using secondary clarifiers and sand filters. Historically, membranes have been used for smaller-flow systems due to the high capital cost of the equipment and high operation and maintenance (O&M) costs. Today however, they are receiving increased use in larger systems. MBR systems are also well suited for some industrial and commercial applications. The high-quality effluent produced by MBRs makes them particularly applicable to reuse applications and for surface

water discharge applications requiring extensive nutrient (nitrogen and phosphorus) removal.

### ADVANTAGES AND DISADVANTAGES

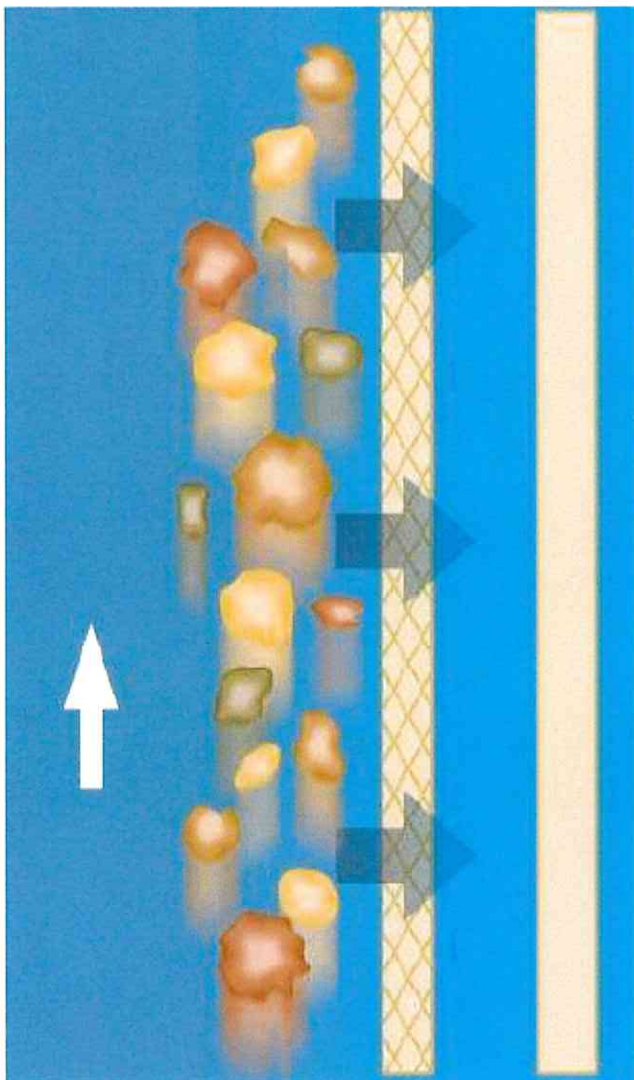
The advantages of MBR systems over conventional biological systems include better effluent quality, smaller space requirements, and ease of automation. Specifically, MBRs operate at higher volumetric loading rates which result in lower hydraulic retention times. The low retention times mean that less space is required compared to a conventional system. MBRs have often been operated with longer solids residence times (SRTs), which results in lower sludge production; but this is not a requirement, and more conventional SRTs have been used (Crawford et al. 2000). The effluent from MBRs contains low concentrations of bacteria, total suspended solids (TSS), biochemical oxygen demand (BOD), and phosphorus. This facilitates high-level disinfection. Effluents are readily discharged to surface streams or can be sold for reuse, such as irrigation.

The primary disadvantage of MBR systems is the typically higher capital and operating costs than conventional systems for the same throughput. O&M costs include membrane cleaning and fouling control, and eventual membrane replacement. Energy costs are also higher because of the need for air scouring to control bacterial growth on the membranes. In addition, the waste sludge from such a system might have a low settling rate, resulting in the need for chemicals to produce biosolids acceptable for disposal (Hermanowicz et al. 2006). Fleischer et al. 2005 have demonstrated that waste sludges from MBRs can be processed using standard technologies used for activated sludge processes.

## MEMBRANE FILTRATION

Membrane filtration involves the flow of water-containing pollutants across a membrane. Water permeates through the membrane into a separate

channel for recovery (Figure 1). Because of the cross-flow movement of water and the waste constituents, materials left behind do not accumulate at the membrane surface but are carried out of the system for later recovery or disposal. The water passing through the membrane is called the *permeate*, while the water with the more-concentrated materials is called the *concentrate* or *retentate*.



**Figure 1. Membrane filtration process (Image from Siemens/U.S. Filter)**

Membranes are constructed of cellulose or other polymer material, with a maximum pore size set during the manufacturing process. The require-

ment is that the membranes prevent passage of particles the size of microorganisms, or about 1 micron (0.001 millimeters), so that they remain in the system. This means that MBR systems are good for removing solid material, but the removal of dissolved wastewater components must be facilitated by using additional treatment steps.

Membranes can be configured in a number of ways. For MBR applications, the two configurations most often used are hollow fibers grouped in bundles, as shown in Figure 2, or as flat plates. The hollow fiber bundles are connected by manifolds in units that are designed for easy changing and servicing.



**Figure 2. Hollow-fiber membranes (Image from GE/Zenon)**

## DESIGN CONSIDERATIONS

Designers of MBR systems require only basic information about the wastewater characteristics, (e.g., influent characteristics, effluent requirements, flow data) to design an MBR system. Depending on effluent requirements, certain supplementary options can be included with the MBR system. For example, chemical addition (at various places in the treatment chain, including: before the primary settling tank; before the secondary settling tank [clarifier]; and before the MBR or final filters) for phosphorus removal can be included in an MBR system if needed to achieve low phosphorus concentrations in the effluent.

MBR systems historically have been used for small-scale treatment applications when portions of the treatment system were shut down and the



wastewater routed around (or bypassed) during maintenance periods.

However, MBR systems are now often used in full-treatment applications. In these instances, it is recommended that the installation include one additional membrane tank/unit beyond what the design would nominally call for. This “N plus 1” concept is a blend between conventional activated sludge and membrane process design. It is especially important to consider both operations and maintenance requirements when selecting the number of units for MBRs. The inclusion of an extra unit gives operators flexibility and ensures that sufficient operating capacity will be available (Wallis-Lage et al. 2006). For example, bioreactor sizing is often limited by oxygen transfer, rather than the volume required to achieve the required SRT—a factor that significantly affects bioreactor numbers and sizing (Crawford et al. 2000).

Although MBR systems provide operational flexibility with respect to flow rates, as well as the ability to readily add or subtract units as conditions dictate, that flexibility has limits. Membranes typically require that the water surface be maintained above a minimum elevation so that the membranes remain wet during operation. Throughput limitations are dictated by the physical properties of the membrane, and the result is that peak design flows should be no

more than 1.5 to 2 times the average design flow. If peak flows exceed that limit, either additional membranes are needed simply to process the peak flow, or equalization should be included in the overall design. The equalization is done by including a separate basin (external equalization) or by maintaining water in the aeration and membrane tanks at depths higher than those required and then removing that water to accommodate higher flows when necessary (internal equalization).

## DESIGN FEATURES

### Pretreatment

To reduce the chances of membrane damage, wastewater should undergo a high level of debris removal prior to the MBR. Primary treatment is often provided in larger installations, although not in most small to medium sized installations, and is not a requirement. In addition, all MBR systems require 1- to 3-mm-cutoff fine screens immediately before the membranes, depending on the MBR manufacturer. These screens require frequent cleaning. Alternatives for reducing the amount of material reaching the screens include using two stages of screening and locating the screens after primary settling.

### Membrane Location

MBR systems are configured with the mem-

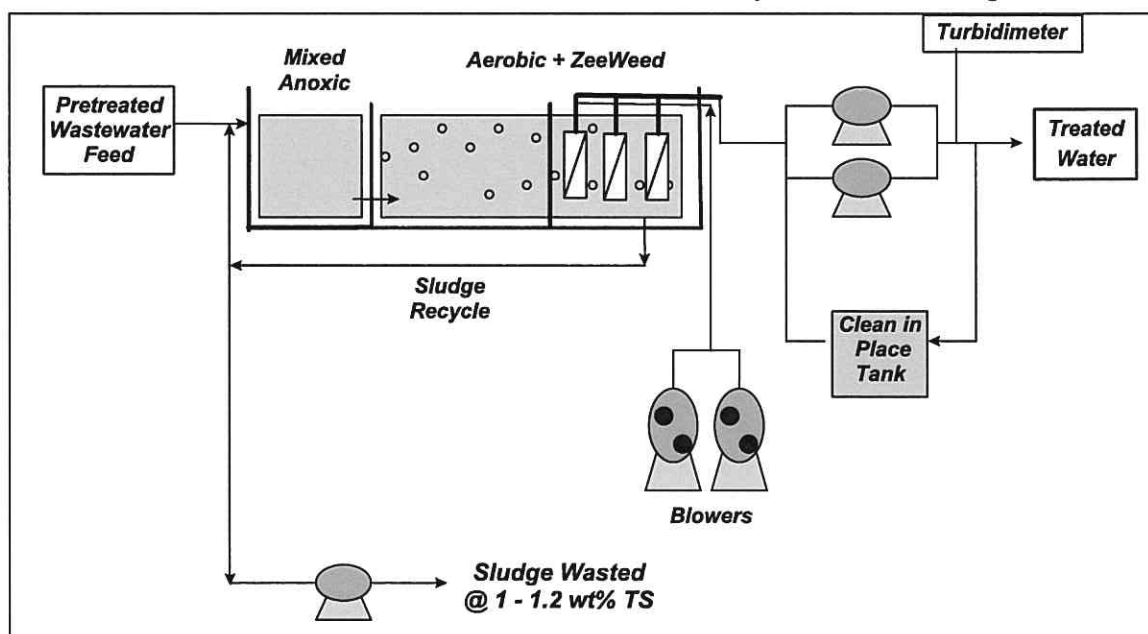


Figure 3. Immersed membrane system configuration (Image from GE/Zenon)

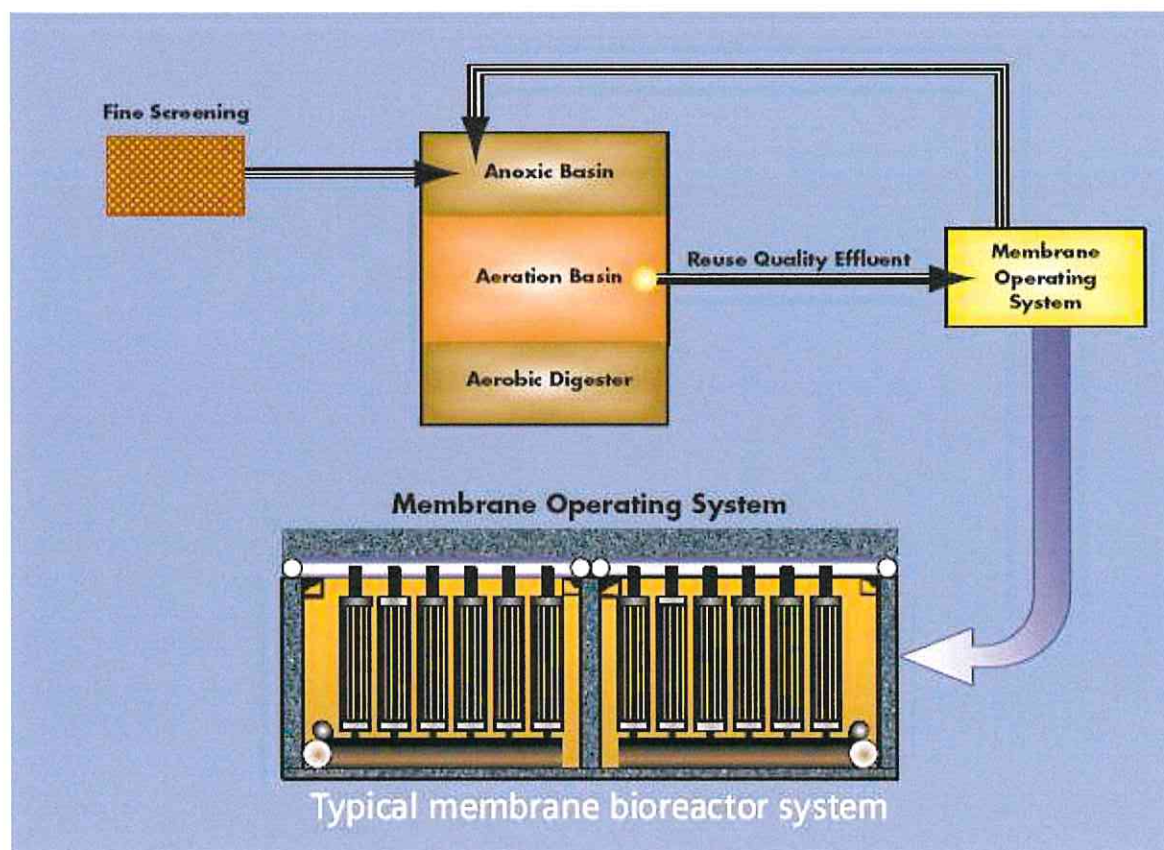


Figure 4. External membrane system configuration (Image from Siemens/U.S. Filter)

branes actually immersed in the biological reactor or, as an alternative, in a separate vessel through which mixed liquor from the biological reactor is circulated. The former configuration is shown in Figure 3; the latter, in Figure 4.

### Membrane Configuration

MBR manufacturers employ membranes in two basic configurations: hollow fiber bundles and plate membranes. Siemens/U.S.Filter's Memjet and Memcor systems, GE/Zenon's ZeeWeed and ZenoGem systems, and GE/Ionics' system use hollow-fiber, tubular membranes configured in bundles. A number of bundles are connected by manifolds into units that can be readily changed for maintenance or replacement. The other configuration, such as those provided by Kubota/Enviroquip, employ membranes in a flat-plate configuration, again with manifolds to allow a number of membranes to be connected in readily changed units. Screening requirements for both systems differ: hollow-fiber membranes typically require 1- to 2-mm screening, while

plate membranes require 2- to 3-mm screening (Wallis-Lage et al. 2006).

### System Operation

All MBR systems require some degree of pumping to force the water flowing through the membrane. While other membrane systems use a pressurized system to push the water through the membranes, the major systems used in MBRs draw a vacuum through the membranes so that the water outside is at ambient pressure. The advantage of the vacuum is that it is gentler to the membranes; the advantage of the pressure is that throughput can be controlled. All systems also include techniques for continually cleaning the system to maintain membrane life and keep the system operational for as long as possible. All the principal membrane systems used in MBRs use an air scour technique to reduce buildup of material on the membranes. This is done by blowing air around the membranes out of the manifolds. The GE/Zenon systems use air scour, as well as a back-pulsing technique, in which permeate is occasionally pumped back

into the membranes to keep the pores cleared out. Back-pulsing is typically done on a timer, with the time of pulsing accounting for 1 to 5 percent of the total operating time.

### **Downstream Treatment**

The permeate from an MBR has low levels of suspended solids, meaning the levels of bacteria, BOD, nitrogen, and phosphorus are also low. Disinfection is easy and might not be required, depending on permit requirements..

The solids retained by the membrane are recycled to the biological reactor and build up in the system. As in conventional biological systems, periodic sludge wasting eliminates sludge buildup and controls the SRT within the MBR system. The waste sludge from MBRs goes through standard solids-handling technologies for thickening, dewatering, and ultimate disposal. Hermanowicz et al. (2006) reported a decreased ability to settle in waste MBR sludges due to increased amounts of colloidal-size particles and filamentous bacteria. Chemical addition increased the ability of the sludges to settle. As more MBR facilities are built and operated, a more definitive understanding of the characteristics of the resulting biosolids will be achieved. However, experience to date indicates that conventional biosolids processing unit operations are also applicable to the waste sludge from MBRs.

### **Membrane Care**

The key to the cost-effectiveness of an MBR system is membrane life. If membrane life is curtailed such that frequent replacement is required, costs will significantly increase. Membrane life can be increased in the following ways:

- Good screening of larger solids before the membranes to protect the membranes from physical damage.
- Throughput rates that are not excessive, i.e., that do not push the system to the limits of the design. Such rates reduce the amount of material that is forced into the membrane and thereby reduce the amount that has to be re-

moved by cleaners or that will cause eventual membrane deterioration.

- Regular use of mild cleaners. Cleaning solutions most often used with MBRs include regular bleach (sodium) and citric acid. The cleaning should be in accord with manufacturer-recommended maintenance protocols.

### **Membrane Guarantees**

The length of the guarantee provided by the membrane system provider is also important in determining the cost-effectiveness of the system. For municipal wastewater treatment, longer guarantees might be more readily available compared to those available for industrial systems. Zenon offers a 10-year guarantee; others range from 3 to 5 years. Some guarantees include cost prorating if replacement is needed after a certain service time. Guarantees are typically negotiated during the purchasing process. Some manufacturers' guarantees are tied directly to screen size: longer membrane warranties are granted when smaller screens are used (Wallis-Lage et al. 2006). Appropriate membrane life guarantees can be secured using appropriate membrane procurement strategies (Crawford et al. 2002).

## **SYSTEM PERFORMANCE**

### **Siemens/U.S. Filter Systems**

Siemens/U.S.Filter offers MBR systems under the Memcor and Memjet brands. Data provided by U.S. Filter for its Calls Creek (Georgia) facility are summarized below. The system, as Calls Creek retrofitted it, is shown in Figure 5. In essence, the membrane filters were used to replace secondary clarifiers downstream of an Orbal oxidation ditch. The system includes a fine screen (2-mm cutoff) for inert solids removal just before the membranes.

The facility has an average flow of 0.35 million gallons per day (mgd) and a design flow of 0.67 mgd. The system has 2 modules, each containing 400 units, and each unit consists of a cassette with manifold-connected membranes. As shown in Table 1, removal of BOD, TSS, and ammonia-nitrogen is excellent; BOD and TSS in the effluent are around the detection limit. Phosphorus is also removed well in the system, and the effluent

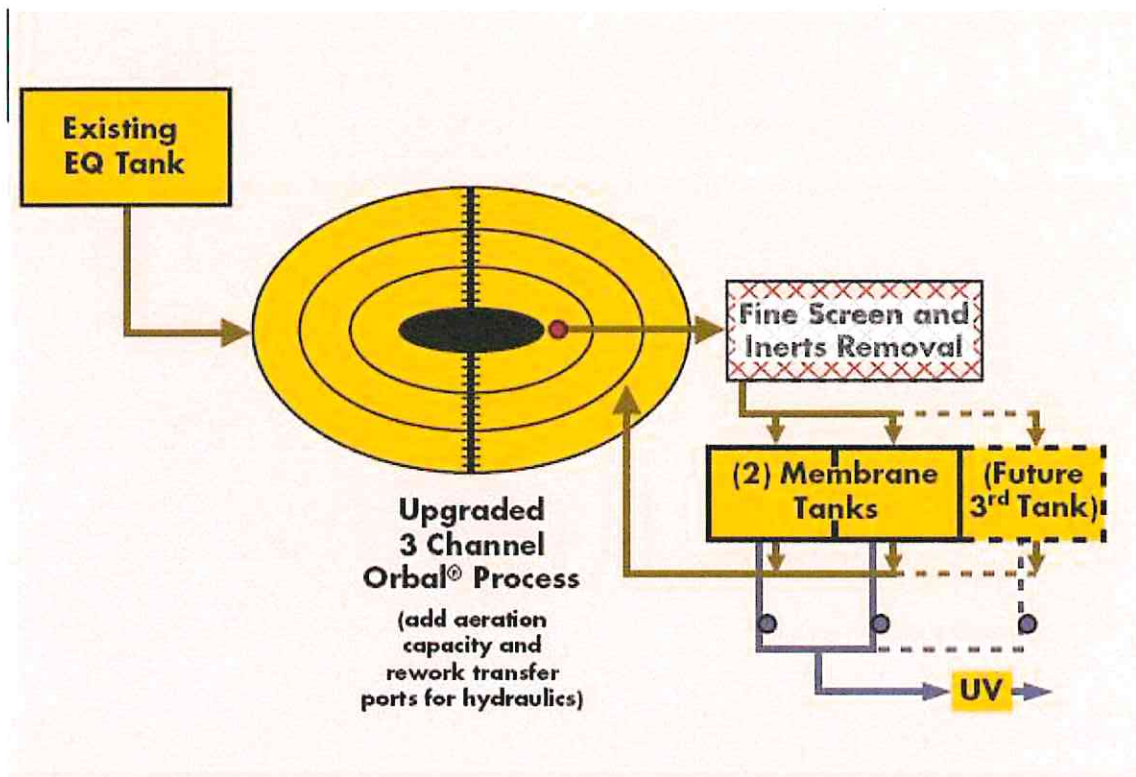


Figure 5. Calls Creek flow diagram (courtesy of Siemens/U.S. Filter)

Table 1.  
Calls Creek results 2005

| Parameter                  | Influent | Effluent |           |           |
|----------------------------|----------|----------|-----------|-----------|
|                            | Average  | Average  | Max Month | Min Month |
| Flow (mgd)                 | 0.35     | --       | 0.44      | 0.26      |
| BOD (mg/L)                 | 145      | 1        | 1         | 1         |
| TSS (mg/L)                 | 248      | 1        | 1         | 1         |
| Ammonia-N (mg/L)           | 14.8     | 0.21     | 0.72      | 0.10      |
| P (mg/L)                   | 0.88     | 0.28     | 0.55      | 0.12      |
| Fecal coliforms (#/100 mL) | --       | 14.2     | 20        | 0         |
| Turbidity (NTU)            | --       | 0.30     | 1.31      | 0.01      |

has very low turbidity. The effluent has consistently met discharge limits.

### Zenon Systems

General Electric/Zenon provides systems under the ZenoGem and ZeeWeed brands. The ZeeWeed brand refers to the membrane, while ZenoGem is the process that uses ZeeWeed.

Performance data for two installed systems are shown below.

**Cauley Creek, Georgia.** The Cauley Creek facility in Fulton County, Georgia, is a 5-mgd wastewater reclamation plant. The system includes biological phosphorus removal, mixed liquor surface wasting, and sludge thickening using a ZeeWeed system to minimize the required volume of the aerobic digester, according to information provided by GE. Ultraviolet disinfection is employed to meet regulatory limits. Table 2 shows that the removal for all param-

**Table 2.**  
**Cauley Creek, Georgia, system performance**

| Parameter                  | Influent | Effluent |           |           |
|----------------------------|----------|----------|-----------|-----------|
|                            | Average  | Average  | Max Month | Min Month |
| Flow (mgd)                 | 4.27     | --       | 4.66      | 3.72      |
| BOD (mg/L)                 | 182      | 2.0      | 2.0       | 2.0       |
| COD (mg/L)                 | 398      | 12       | 22        | 5         |
| TSS (mg/L)                 | 174      | 3.2      | 5         | 3         |
| TKN (mg/L)                 | 33.0     | 1.9      | 2.9       | 1.4       |
| Ammonia-N (mg/L)           | 24.8     | 0.21     | 0.29      | 0.10      |
| TP (mg/L)                  | 5.0      | 0.1      | 0.13      | 0.06      |
| Fecal coliforms (#/100 mL) | --       | 2        | 2         | 2         |
| NO3-N (mg/L)               | --       | 2.8      |           |           |

ters is over 90 percent. The effluent meets all permit limits, and is reused for irrigation and lawn watering.

**Traverse City, Michigan.** The Traverse City Wastewater Treatment Plant (WWTP) went through an upgrade to increase plant capacity and produce a higher-quality effluent, all within the facility's existing plant footprint (Crawford et al. 2005). With the ZeeWeed system, the facility was able to achieve those goals. As of 2006, the plant is the largest-capacity MBR facility in North America. It has a design average annual flow of 7.1 mgd, maximum monthly flow of 8.5 mgd, and peak hourly flow of 17 mgd. The membrane system consists of a 450,000-gallon tank with eight compartments of equal size. Secondary sludge is distributed evenly to the compartments. Blowers for air scouring, as well as permeate and back-pulse pumps, are housed in a nearby building.

Table 3 presents a summary of plant results over a 12-month period. The facility provides excellent removal of BOD, TSS, ammonia-nitrogen, and phosphorus. Figure 6 shows the influent, effluent, and flow data for the year.

Operating data for the Traverse City WWTP were obtained for the same period. The mixed liquor suspended solids over the period January to August averaged 6,400 mg/L, while the mixed liquor volatile suspended solids averaged 4,400 mg/L. The energy use for the air-scouring blow-

ers averaged 1,800 kW-hr/million gallons (MG) treated.

## **COSTS**

### **Capital Costs**

Capital costs for MBR systems historically have tended to be higher than those for conventional systems with comparable throughput because of the initial costs of the membranes. In certain situations, however, including retrofits, MBR systems can have lower or competitive capital costs compared with alternatives because MBRs have lower land requirements and use smaller tanks, which can reduce the costs for concrete. U.S. Filter/Siemen's Memcor package plants have installed costs of \$7–\$20/gallon treated.

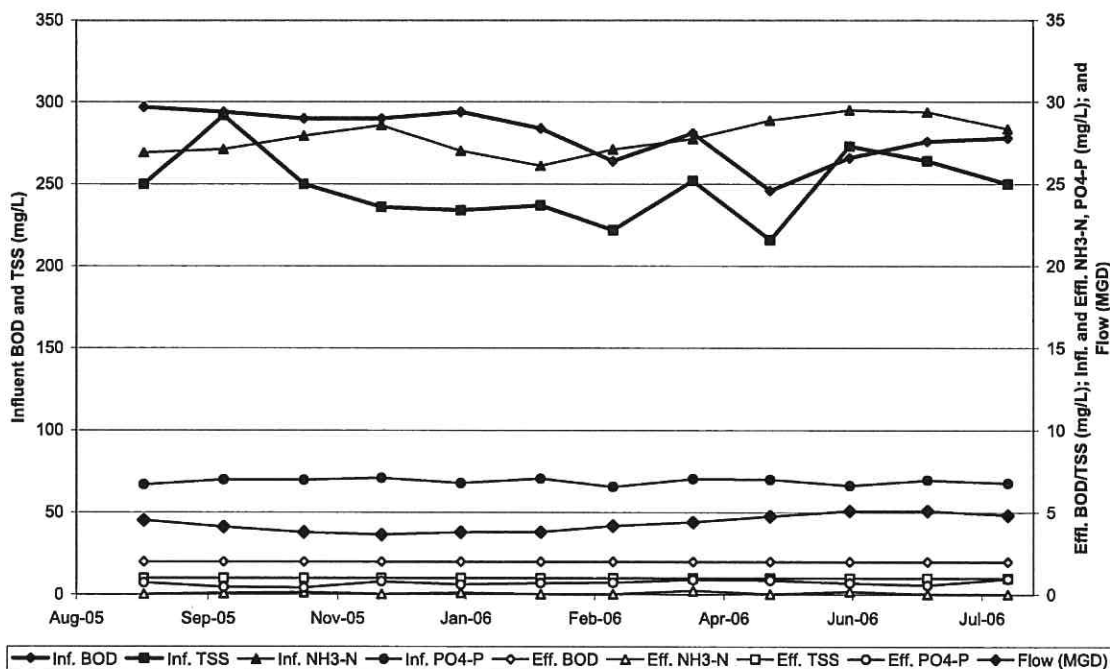
Fleischer et al. (2005) reported on a cost comparison of technologies for a 12-MGD design in Loudoun County, Virginia. Because of a chemical oxygen demand limit, activated carbon adsorption was included with the MBR system. It was found that the capital cost for MBR plus granular activated carbon at \$12/gallon treated was on the same order of magnitude as alternative processes, including multiple-point alum addition, high lime treatment, and post-secondary membrane filtration.

### **Operating Costs**

Operating costs for MBR systems are typically higher than those for comparable conventional systems. This is because of the higher energy

**Table 3.**  
**Summary of Traverse City, Michigan, Performance Results**

| Parameter           | Influent | Effluent |           |           |
|---------------------|----------|----------|-----------|-----------|
|                     | Average  | Average  | Max Month | Min Month |
| Flow (mgd)          | 4.3      | --       | 5.1       | 3.6       |
| BOD (mg/L)          | 280      | < 2      | < 2       | < 2       |
| TSS (mg/L)          | 248      | < 1      | < 1       | < 1       |
| Ammonia-N (mg/L)    | 27.9     | < 0.08   | < 0.23    | < 0.03    |
| TP (mg/L)           | 6.9      | 0.7      | 0.95      | 0.41      |
| Temperature (deg C) | 17.2     | --       | 23.5      | 11.5      |



**Figure 6. Performance of the Traverse City plant**

costs if air scouring is used to reduce membrane fouling. The amount of air needed for the scouring has been reported to be twice that needed to maintain aeration in a conventional activated sludge system (Scott Blair, personal communication, 2006). These higher operating costs are often partially offset by the lower costs for sludge disposal associated with running at longer sludge residence times and with membrane thickening/dewatering of wasted sludge.

Fleischer et al. (2005) compared operating costs. They estimated the operating costs of an MBR system including activated carbon adsorption at \$1.77 per 1,000 gallons treated. These costs were

of the same order of magnitude as those of alternative processes, and they compared favorably to those of processes that are chemical-intensive, such as lime treatment.

### ACKNOWLEDGMENTS

The authors acknowledge Dr. Venkat Mahendrakar, GE/Zenon, Mr. John Irwin, Siemens/U.S. Filter, and Mr. Scott Blair and Mr. Leroy Bonkoski of the Traverse City WWTP for their assistance in obtaining data and system information. EPA acknowledges external peer

reviewers Pat Brooks, Alan Cooper, and Glenn Daigger for their contribution.

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# Collin Central Appraisal District

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April 7, 2022

Rhonda Williams, Mayor  
City of Blue Ridge  
200 S Main St  
Blue Ridge, TX 75424

RE: Board of Directors Vacancy

Dear Mayor Williams:

Please be advised that the District's board of directors now has a vacancy, and this letter is the first step in filling the vacancy. The details of the vacancy are as follows.

Name: Earnest R. Burke

Nature of Resignation: Medical

Date of Resignation: March 30, 2022

Original Term of Office: January 1, 2022 – December 31, 2023

Vacated Board Term to Complete: Election Date (May 2022 est.) - December 31, 2023

## **Property Tax Code Section 6.03(L)**

*If a vacancy occurs on the board of directors other than a vacancy in the position held by a county assessor-collector serving as a nonvoting director, each taxing unit that is entitled to vote by this section may nominate by resolution adopted by its governing body a candidate to fill the vacancy. The unit shall submit the name of its nominee to the chief appraiser within 45 days after notification from the board of directors of the existence of the vacancy, and the chief appraiser shall prepare and deliver to the board of directors within the next five days a list of the nominees. The board of directors shall elect by majority vote of its members one of the nominees to fill the vacancy.*

## **Mr. Burke's Election Information**

Nominating Entity: Plano ISD

Entities Casting Votes for Mr. Burke: Collin College, McKinney ISD, Plano ISD, City of Richardson & City of Sachse





# Collin Central Appraisal District

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April 7, 2022

Edie Sims, City Secretary  
City of Blue Ridge  
200 S Main St  
Blue Ridge, TX 75424

RE: Board of Directors Vacancy

Dear Ms. Sims:

Please be advised that the District's board of directors now has a vacancy, and this letter is the first step in filling the vacancy. The details of the vacancy are as follows.

Name: Earnest R. Burke

Nature of Resignation: Medical

Date of Resignation: March 30, 2022

Original Term of Office: January 1, 2022 – December 31, 2023

Vacated Board Term to Complete: Election Date (May 2022 est.) - December 31, 2023

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## **Mr. Burke's Election Information**

Nominating Entity: Plano ISD

Entities Casting Votes for Mr. Burke: Collin College, McKinney ISD, Plano ISD, City of Richardson & City of Sachse

**CITY OF BLUE RIDGE**

**CITY-WIDE  
GARAGE  
SALE**

**FRI - SUN  
JUNE 3-5**