

# **Wimberley Wastewater System**

**Council Workshop  
August 14, 2018**

**Condensed Version**

# **Objectives of City Wastewater System**

**Clean up Cypress Creek (to extent caused by failing septics)**

**Maintain Local Control with City Owned CCN**

**Provide Infrastructure to Allow for Controlled Growth  
Downtown as Permitted by the City**

**Provide Water to Irrigate Blue Hole Park**

**Protect Our Environment - Blanco River, Cypress Creek,  
and Aquifers**

**Make Rates Affordable to Sewer Customers**

**Accomplish in a Financially Responsible Manner**

# Project Cost Summary

	Original Budget	Current Estimate	Variance
Collection System	\$ 2,259,000	\$ 3,616,230	\$ 1,357,230
Treatment Plant	1,365,100	3,068,900	1,703,800
<b>Total Construction Costs</b>	<b>\$ 3,624,100</b>	<b>\$ 6,685,130</b>	<b>\$ 3,061,030</b>
Contingency Funds	512,998	479,521	(33,477)
Bond Reserve and Origination Fee	343,636	333,354	(10,282)
<b>Subtotal</b>	<b>\$ 4,480,734</b>	<b>\$ 7,498,005</b>	<b>\$ 3,017,271</b>
Bond Counsel and Financial Advisor	46,310	68,950	
Project Administration	-	175,000	
Construction Administration	-	77,575	
EDA Administration	-	25,000	
Other	30,000	-	
Construction Interest (2 years)	232,271	170,847	
<b>Total Other Costs</b>	<b>\$ 308,581</b>	<b>\$ 517,372</b>	<b>\$ 208,791</b>
<b>Total Project Cost</b>	<b>\$ 4,789,315</b>	<b>\$ 8,015,377</b>	<b>\$ 3,226,062</b>
<b>Percentage Over Budget</b>			<b>67%</b>

This is the original \$5.5 million budget that existed on April 19, 2017, the date the bids were opened. However, the reclaimed water line in that budget was removed from the scope, reducing it to \$4.8 million. The above shows the current cost estimate compared to that adjusted budget. Almost all of the \$3.2 increase is attributable to the bid amounts (and awarded contracts and change orders) being significantly higher than expected.

# Project Funding

	Sources	Comments	
Texas Water Development Board (TWDB) Revenue Bond	\$ 5,498,005	Loan Funded October 2017	✓
Economic Development Agency (EDA) Grant	1,000,000	Grant Available	✓
Way Family Foundation Grant	1,000,000	Due to 2017 Project Plan and Budget Changes and Late Start, Grant May No Longer be Binding and Available Since Agreement Never Amended	?
<b>Subtotal</b>	<b>\$ 7,498,005</b>		
City's Operating Reserves	517,372	Costs Being Paid from City's Operating Reserves	✓
<b>Total Sources of Funds</b>	<b>\$ 8,015,377</b>		

The original \$5.5 million budget was expected to be financed as follows: \$4.5 million from a TWDB loan and a \$1.0 million EDA Grant. As costs escalated, funding requirements have grown to over \$8 million. This includes the Way Grant that was provided to fund cost overruns, as well as funds from the City's operating reserves. However, for reasons shown above, the Way Grant will need to be amended to assure funding under this plan.

# Who Pays for Sewer System?

This project is being financed with \$5.3 million in TWDB Revenue Bonds. By definition, Revenue Bond debt service, as well as annual operating expenses of the system, are to be repaid by the Users. In the City's case, and throughout this process, the Users have been identified as:

- Downtown Sewer Customers (approximately 100 in number)
- Blue Hole Park as a buyer of reclaimed water for irrigation

Here is the "formula" for determining how much the Sewer Customers must pay. Actual numbers are on the following page.

$$\begin{aligned} & \text{Expected Annual Operating Costs (variable)} \\ & + \text{Debt Service on TWDB Loan (already fixed)} \\ & = \text{Total Revenue Requirements} \\ & - \text{Revenue from City for Reclaimed Water} \\ & = \text{Revenue Required from Sewer Customers} \end{aligned}$$

# Revenue Requirements

- Expected operating costs to run the plant and collection system have been updated
- The TWDB loan payments have been established and fixed
- The Blue Hole Reclaimed Water payment as a City Subsidy is assumed at \$200,000 per year – the same amount that has been utilized in all prior forecasts and rate studies. The City Wastewater/Blue Hole Agreement states “up to \$200,000” per year
- The resulting \$274,289 shown below is the amount the approximately 100 downtown Wimberley property owners will initially be responsible to pay in the first year – and similar amounts thereafter
- Based on number of customers and volumes, rates are calculated from these Required Revenues and are shown on the next page

<b>Operating Costs</b>	<b>\$ 233,749</b>
<b>Debt Service (TWDB Loan)</b>	<b>240,540</b>
<b>Total Revenue Required</b>	<b>\$ 474,289</b>

<b>Blue Hole Reclaimed Water (Subsidy)</b>	<b>\$ (200,000)</b>
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<b>Sewer Customer Revenue Required</b>	<b>\$ 274,289</b>
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# Customer Rates

The Sewer Customer revenue requirements of \$274,289 result in the following calculated rates. Also shown are some examples of various monthly bills based on volume. Note that with the \$200,000, the City is subsidizing 42% of the bills. Still, rates are comparably high.

Revenue Requirements			
Sewer Customers (approx 100 customers)		\$	274,289
Blue Hole Reclaimed Water (Subsidy)	42% →		200,000
<b>Total Revenue Required</b>		\$	<b>474,289</b>

Rates Per Unit			
Base Rate - Per LUE		\$	35.00
Volume Rate - Per thousand gallons		\$	16.19
Capital Recovery Fee - Per LUE (over 8 yrs - \$26.04/mo)		\$	2,500

<u>Examples</u>	<u>Typical</u>	<u>Mo. Gallons</u>	<u>Monthly Bill</u>
<b>Monthly Sewer Bills at Various Volumes (Water Usage)</b>	Small Business	2,000	\$ 93
	Residential	4,000	\$ 126
		9,000	\$ 207
	Small Restaurant	15,000	\$ 345
		30,000	\$ 689
	Large Restaurant	50,000	\$ 1,149
	Deer Creek	300,000	\$ 6,024

# City/Aqua Option

- Aqua Offer
- Description of City/Aqua Option
- System Design Change
- Aqua Texas Information

## Aqua Offer (Per Offer Letter)

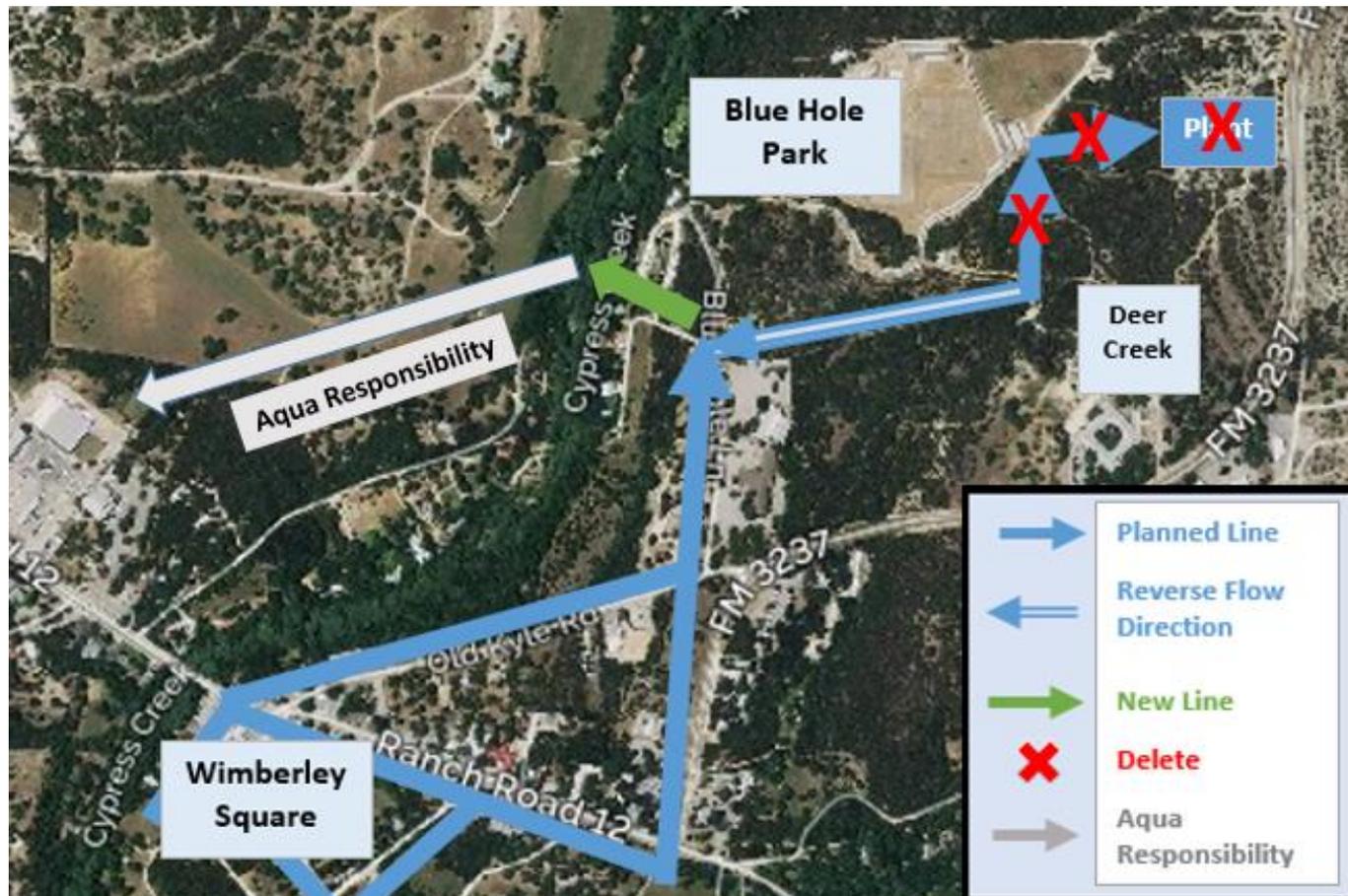
- City Retains CCN - No CCN Transfer to Aqua
- Aqua takes downtown wastewater at Cypress Creek location and processes it at their non-discharge wastewater plant
- City will be an Aqua wholesale customer
- Aqua Cost is \$4,398 per month (\$52,776 per year) - Cost is based on PUC tariff rates in effect since 2009
  - No increase in rates for five years
  - Any increases thereafter is subject to an appeal process with PUC
- Aqua will upgrade entire plant from Type 2 to Type 1
- Reclaimed Type 1 effluent will be made available to Blue Hole for irrigation at no cost
- One time impact fee of \$300,000
- Timing of completion of their construction consistent with City's plans

## Description of City/Aqua Option

- City retains ownership of their CCN and therefore retains local control of Wimberley growth
- City builds, owns and maintains the downtown collection system
- Wastewater facility is not built in Blue Hole Park; wastewater is sent to Aqua for processing
- Appropriately sized storage tank/irrigation system is built to meet watering needs of the Park
- Type 1 effluent is provided to the storage tank in the Park via a reclaimed water line running down Winters Mill Parkway
- City of Wimberley is retail provider to its customers and will set/control rates

# City/Aqua Option - System Design Change

Under this Option, the design change is relatively minor. The collection system as engineered continues to be built as planned in the downtown area. However, after entering the Park, the sewer line will tap into an Aqua line for them to transport and process – and no plant will be built in the Park. The **Green Arrow** represents the minor addition. No Discharge Sewer Plant in the Park.



# City/Aqua Option - Reclaimed Water System

Water to Blue Hole - Includes new reclaimed water line, appropriately sized irrigation storage tank and irrigation system



# Aqua Texas Information

- Provider of Wimberley sewer services north of Cypress Creek
  - Customers include Wimberley Schools, Wimberley Community Center, HEB, Brookshires, Ace, Leaning Pear, New Assisted Living Complex, and Others
- 10 Full-time employees in Wimberley Valley providing 24/7 service coverage
- Established company with experience, technical expertise and financial resources – operates 44 wastewater facilities in Texas
- Size allows for economies of scale to lower costs vs small treatment facilities

# Aqua Rates Subject to Regulatory Oversight

## Aqua's Rates to the City Are Regulated

- Aqua's rate for the City connection is subject to a regulatory oversight by the Public Utility Commission (PUC), with customers (in this case the City) having appellate rights
- Aqua's last rate filing that resulted in a change of customer rates for the Wimberley Valley was in 2009
- Aqua is agreeing to hold the quoted rate to the City **for five more years**

## The City's Rates to City Customers Are Not Regulated

- Under both options, the City Council has the sole authority for setting and changing customer rates. A City owned utility is not subject to the PUC customer appeal. So, the City's customers have no recourse other than their voice and voting power

# **Comparison of Options City to City/Aqua**

- **Project Cost**
- **Project Funding**
- **Revenue Requirements**
- **Customer Rates**
- **Environmental**

# Project Cost Comparisons

This table shows the comparison of Project Costs for the City vs the City/Aqua Option. Only the construction costs are different. City/Aqua amounts are based on revised engineer's estimates and the Aqua offer. It shows a lower City/Aqua cost of \$1.8 million. This does not include the cost to terminate the plant contract, shown as TBD, which would reduce this difference.

	City Option	City / Aqua Option	Variance
Collection System	\$ 3,616,230	\$ 3,616,230	
Treatment Plant	3,068,900	-	
Terminate Treatment Plant Contract		TBD	TBD
Modifications to Collection System		146,592	
Engineering Design		60,000	
Aqua Impact Fee (one time)		300,000	
Reclaimed Water Line, Storage Tank and Irrigation for Blue Hole		750,000	
<b>Total Construction Costs</b>	<b>\$ 6,685,130</b>	<b>\$ 4,872,822</b>	<b>\$ (1,812,308)</b>
Contingency Funds	479,521	479,521	-
Bond Reserve and Origination Fee	333,354	333,354	-
<b>Subtotal</b>	<b>\$ 7,498,005</b>	<b>\$ 5,685,697</b>	<b>\$ (1,812,308)</b>
Bond Counsel and Financial Advisor	68,950	68,950	
Project Administration	175,000	175,000	
Construction Administration	77,575	77,575	
EDA Administration	25,000	25,000	
Construction Interest (2 years)	170,847	170,847	
<b>Total Other</b>	<b>\$ 517,372</b>	<b>\$ 517,372</b>	<b>\$ -</b>
<b>Total Project Cost</b>	<b>\$ 8,015,377</b>	<b>\$ 6,203,069</b>	<b>\$ (1,812,308)</b>

# Funding Comparisons

This table shows the Funding comparison for the City vs the City/Aqua Options. Lower Project Costs result in lower Funding requirements under the City/Aqua Option. The \$363,886 in excess funds can be set aside for future payments of principal and interest on the TWDB loan – thus improving unrestricted operating funds in the future. Alternatively it could provide additional contingency reserves. TBD plant termination costs would be funded by City operating reserves.

	City	City/Aqua
<b>Total Project Cost - Funding Required</b>	<b>\$ 8,015,377</b>	<b>\$ 6,203,069</b>
<b>Texas Water Development Board (TWDB) Revenue Bond</b>	<b>\$ 5,498,005</b>	<b>\$ 5,498,005</b>
<b>Economic Development Agency (EDA) Grant</b>	<b>1,000,000</b>	<b>1,000,000</b>
<b>Way Family Foundation Grant</b>	<b>1,000,000</b>	<b>-</b>
<b>Subtotal Funding</b>	<b>\$ 7,498,005</b>	<b>\$ 6,498,005</b>
<b>City's Operating Reserves</b>	<b>517,372</b>	<b>68,950</b>
<b>Total Sources of Funds</b>	<b>\$ 8,015,377</b>	<b>\$ 6,566,955</b>
<b>Excess Sources of Funds</b>	<b>\$ -</b>	<b>\$ 363,886</b>

# Revenue Requirement Comparisons

- Substituting Aqua fees for Plant costs, total operating costs are significantly less under the City/Aqua Option - by \$161,473 per year
- The Blue Hole Reclaimed Water payment as a City Subsidy still assumed at \$200,000
- The resulting revenue requirement for Sewer Customer is reduced from \$274,89 to \$112,816
- Rate comparisons are shown on the next page

	City Option	City / Aqua Option	Variance
Operating Costs	\$ 233,749	\$ 72,276	\$ (161,473)
Debt Service (TWDB Loan)	240,540	240,540	-
<b>Total Revenue Required</b>	<b>\$ 474,289</b>	<b>\$ 312,816</b>	<b>\$ (161,473)</b>
Blue Hole Reclaimed Water (Subsidy)	\$ (200,000)	\$ (200,000)	\$ -
<b>Sewer Customer Revenue Required</b>	<b>\$ 274,289</b>	<b>\$ 112,816</b>	<b>\$ (161,473)</b>

 2.4X

## Key Observations

- Total Cost Difference over 30 years is over \$4 million
- Assuming customers benefit for entire difference: City rates are 2.4 X City/Aqua rates
- Or there can be some combination of the City and Customers sharing in cost savings

# Customer Rates – Comparison of Options

		City Option		City/Aqua Option
<b>Revenue Requirements</b>				
Sewer Customers (approx 100 customers)		\$ 274,289	<b>2.4X</b> 	\$ 112,816
Blue Hole Reclaimed Water (Subsidy)		200,000		200,000
<b>Total Revenue Required</b>		<b>\$ 474,289</b>		<b>\$ 312,816</b>
<b>Rates Per Unit</b>				
Base Rate - Per LUE		\$ 35.00		\$ 35.00
Volume Rate - Per thousand gallons		\$ 16.19		\$ 0.46
Capital Recovery Fee - Per LUE (over 8 yrs - \$26.04/mo)		\$ 2,500		\$ 2,500
<b>Examples</b>	<b>Typical</b>	<b>Mo. Gallons</b>	<b>Monthly Bill</b>	<b>Monthly Bill</b>
<b>Monthly Sewer Bills at Various Volumes (Water Usage)</b>	Small Business	2,000	\$ 93	\$ 62
	Residential	4,000	\$ 126	\$ 63
		9,000	\$ 207	\$ 65
	Small Restaurant	15,000	\$ 345	\$ 109
		30,000	\$ 689	\$ 217
	Large Restaurant	50,000	\$ 1,149	\$ 362
	Deer Creek	300,000	\$ 6,024	\$ 1,305

**Average Rates Under City Option Are 2.4X City/Aqua Option**

# Customer Rates – Comparison of Options

Another Option is to Reduce the City Subsidy (Blue Hole Reclaimed Water)

		City Option	City/Aqua Option	Reduce City Subsidy		
				by \$50,000	by \$100,000	
<b>Revenue Requirements</b>						
Sewer Customers (approx 100 customers)		\$ 274,289	\$ 112,816	\$ 162,816	\$ 212,816	
Blue Hole Reclaimed Water (Subsidy)		200,000	200,000	150,000	100,000	
<b>Total Revenue Required</b>		<b>\$ 474,289</b>	<b>\$ 312,816</b>	<b>\$ 312,816</b>	<b>\$ 312,816</b>	
<b>Rates Per Unit</b>						
Base Rate - Per LUE		\$ 35.00	\$ 35.00	\$ 35.00	\$ 35.00	
Volume Rate - Per thousand gallons		\$ 16.19	\$ 0.46	\$ 5.33	\$ 10.20	
Capital Recovery Fee - Per LUE (over 8 yrs - \$26.04/mo)		\$ 2,500	\$ 2,500	\$ 2,500	\$ 2,500	
<b>Examples</b>	<b>Typical</b>	<b>Mo. Gallons</b>	<b>Monthly Bill</b>	<b>Monthly Bill</b>	<b>Monthly Bill</b>	<b>Monthly Bill</b>
<b>Monthly</b>	Small Business	<b>2,000</b>	<b>\$ 93</b>	<b>\$ 62</b>	<b>\$ 72</b>	<b>\$ 81</b>
<b>Sewer</b>	Residential	<b>4,000</b>	<b>\$ 126</b>	<b>\$ 63</b>	<b>\$ 82</b>	<b>\$ 102</b>
<b>Bills</b>		<b>9,000</b>	<b>\$ 207</b>	<b>\$ 65</b>	<b>\$ 109</b>	<b>\$ 153</b>
<b>at Various</b>	Small Restaurant	<b>15,000</b>	<b>\$ 345</b>	<b>\$ 109</b>	<b>\$ 182</b>	<b>\$ 255</b>
<b>Volumes</b>		<b>30,000</b>	<b>\$ 689</b>	<b>\$ 217</b>	<b>\$ 363</b>	<b>\$ 509</b>
<b>(Water</b>	Large Restaurant	<b>50,000</b>	<b>\$ 1,149</b>	<b>\$ 362</b>	<b>\$ 606</b>	<b>\$ 849</b>
<b>Usage)</b>	Deer Creek	<b>300,000</b>	<b>\$ 6,024</b>	<b>\$ 1,305</b>	<b>\$ 2,766</b>	<b>\$ 4,227</b>

Above illustrates City Subsidy could be reduced and still achieve lower rates. Subsidy could be reduced to \$39,000 and still have same City Option rates.

# Project Timeline and Permits

- Modifications to the wastewater design will require minor engineering and will not delay its current estimated completion date
- Aqua construction commitment consistent with City's timeline
- No permits required to bore under Cypress Creek

# Environmental - Discharge

## **No Amount of Effluent Discharge is Healthy for the Blanco River and Our Aquifers**

- **Changing the natural chemistry with higher nutrient levels, such as nitrogen and phosphorus, creates an enhanced environment for algae blooms**
- **Unsightly algae competes for oxygen with aquatic fish and wildlife**
- **Sewer treatment plants are not effective at removing pharmaceuticals, household cleaners and detergents, pesticides, herbicides, and other toxic chemicals**
- **Blanco River directly feeds our critical and sensitive aquifers – our source of drinking water**
- **Effluent discharge is a concern to both the aquatic environment and human health**

# Environmental – Discharge Options

## New City Plant

- 75,000 gpd Discharge Permit (Type 1) into Deer Creek/Blanco River
- Plans for beneficial reuse for irrigation at Blue Hole
- 12 acres of irrigation and 500,000 gallon storage tank
- A No-Discharge permit from TCEQ would have required 29 acres and 5.7 million gallons of storage (Plummer report 12-13)
- **Plant will discharge into Blanco River when storage is full and there is no need for irrigation**

## Aqua Plant

- 250,000 gpd Texas Land Application, No-Discharge Permit (TLAP) (Currently Type 2, but Aqua will upgrade entire plant to Type 1)
- 143 acres of irrigation and 19 million gallon storage pond
- **No discharge into waterways permitted at any time**

# Trucking Excess Effluent Not Economical



Gallons in Storage Tank	500,000
Reclaimed Water Value (Delivered) \$/thousand gallons (1)	\$ 1.47
<b>Total Economic Value of Water Delivered to Customer</b>	<b>\$ 735</b>

(1) Reclaimed water rates per thousand gallons (delivered to customers)  
San Antonio \$1.38. San Marcos \$1.56. Average \$1.47 per thousand gallons



Tanker Size - Gallons >>>>	5,000	9,000
Number of Trucks Required To Empty Storage Tank >>	100	56

## Options

- Pay Tens of Thousands of Dollars to Truck Away, or
- Discharge into Blanco River at No Cost

# Conclusions

- **Stakeholders Committee Recommendation**
- **Ad Hoc Committee Recommendation**
- **Alan Plummer Associates Opinion Letter**
- **Conclusions**

# Stakeholder Committee Recommendation

## Central Wimberley Wastewater Stakeholder Committee:

### Recommendations to Wimberley City Council in response to mission statement provided by Council

*Nov. 20, 2013*

#### Alternative Position in the Event Objective II is Not Accomplished

- In the event that construction costs for city treatment and reuse systems exceed the engineer's estimate (including contingency, relocation of plant within Blue Hole, and Winter's Mill reuse line) by more than 10%, if the City's expanded 5-5-2-1 plant permit is denied, or the City fails to commit the funds necessary to construct the treatment plant, the City shall negotiate with Aqua Texas to send the planned capacity to Aqua for wholesale treatment

# Ad Hoc Committee Recommendation

Wimberley  
Downtown Wastewater System  
Citizens Ad Hoc Committee  
Presentation of Report  
Dated June 25, 2016  
Presented June 30, 2016

- **Key Observation** – City has never seriously negotiated with Aqua Texas to develop a proposal that would allow a fair comparison. This made it impossible for the Committee to fully determine the economic feasibility of the Aqua options in relation to the City’s proposed wastewater system.
- **Conclusion** - Explore the viability of the various options with Aqua in greater depth during the bidding process to avoid any delay should the project prove not to be economically feasible

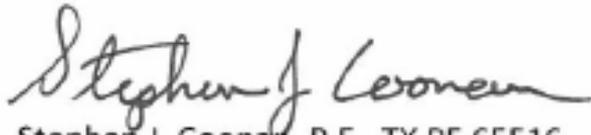
# Engineer's Opinion Letter

We have reviewed the proposed modifications. In our professional opinion, these modifications are all technically feasible and will accomplish the City's goals of providing wastewater management services to the Central Wimberley area as well as providing irrigation water for the soccer fields at Blue Hole Park. Furthermore, it is our opinion that the proposed modifications will be protective of the special environment that exists in Wimberley.

If we can be of further assistance, please let us know.

Sincerely,

ALAN PLUMMER ASSOCIATES, INC.  
TBPE Firm Registration No. 13

A handwritten signature in black ink that reads "Stephen J. Coonan". The signature is written in a cursive, flowing style.

Stephen J. Coonan, P.E., TX PE 65516  
Principal

# Key Conclusions

A decision to implement the City/Aqua option will result in the following benefits to the City of Wimberley:

- Overall wastewater project commitments will be met:
  - Collection/processing of wastewater for downtown Wimberley
  - Type 1 effluent available for Blue Hole Park and no discharge into the Blanco River
- Overall wastewater project cost will be lower by \$1.8 million (less plant contract termination TBD)
- Annual operating expenses will be lower by \$161,000; saving the City and/or Customers over \$4 million over a 30-year period
- Customer rates will be 2.4 times higher under the City option vs City/Aqua (or City has option to share in cost savings)

# Other Key Benefits

- City of Wimberley retains CCN and local control for responsible downtown growth
- Avoids potential plant spills of wastewater and odor pollution in the park
- Avoids discharge of wastewater effluent into the Blanco River, or excess runoff into Cypress Creek, thereby preserving their natural state for the future
- Makes Type 1 effluent available to the Wimberley Valley that will help reduce the need to pull water out of our already stressed aquifers
- Eliminates the financial burden and risks of maintaining a plant, keeping it current with changing environmental standards, unexpected shutdowns and replacement at end of life

<b>Objectives of Wastewater System</b>	<b>City</b>	<b>City/ Aqua</b>
Clean up Cypress Creek (to extent caused by failing septics)	✓	✓
Maintain Local Control with City Owned CCN	✓	✓
Provide Infrastructure to Allow for Controlled Growth Downtown as Permitted by the City	✓	✓
Provide Water to Irrigate Blue Hole Park	✓	✓
Protect Our Environment - Blanco River, Cypress Creek, and Aquifers	X	✓
Make Rates Affordable to Sewer Customers	X	✓
Accomplish in a Financially Responsible Manner	X	✓

**Conclusion – City/Aqua Option Better Choice**