



NOTICE OF REGULAR MEETING

July 22, 2020

SHENANDOAH MUNICIPAL DEVELOPMENT DISTRICT

STATE OF TEXAS
COUNTY OF MONTGOMERY
CITY OF SHENANDOAH

AGENDA

NOTICE IS HEREBY GIVEN that a Meeting of the Shenandoah Municipal Development District will be held on Wednesday, July 22, 2020 at 6:00 p.m. for the purpose of considering the following:

1. CALL TO ORDER

2. CALL OF ROLL

3. CITIZENS INQUIRY

Responses to inquiries are limited by state law to a recitation of existing policy or a statement of specific factual information given in response to the inquiry. Any deliberation or decision by the Board shall be limited to a proposal to place the subject on the agenda of a future meeting.

4. Discussion regarding the Capital Improvement Plan (CIP).

5. Discussion of the 2020 – 2021 proposed budget.

6. Discussion and possible action to ratify the accounts payable for June, 2020.

DIRECTORS' INQUIRY

Pursuant to Texas Government Code Sect. 551.042, the Directors may inquire about a subject not specifically listed on this Agenda. Responses are limited to a recitation of existing policy or a statement of specific factual information given in response to the inquiry. Any deliberation or decision shall be limited to a proposal to place the subject on the agenda of a future meeting.

EXECUTIVE SESSION

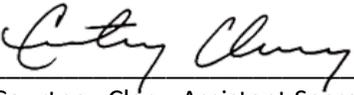
Public notice is given that the Municipal Development District Board may elect to go into Executive Session at any time during the meeting in order to discuss any matters listed on the Agenda when authorized by the provisions of the Open Meeting Act, Chapter 551 of the Texas Government Code, to receive advice from legal counsel, to discuss matters of land acquisition, personnel matters or other lawful matters that are specifically related to items listed on this Agenda. Prior to any such closed session, the President, in open session, will identify the agenda item to be discussed and the Section or Sections of Chapter 551 under which the closed discussion is authorized.

ADJOURN

There is the potential for a quorum of City Council members to be present at this meeting.

City Hall is wheelchair accessible. A sloped entry is available at the entrance with specially marked parking spaces available. Requests for accommodations or interpretive services must be made 48 hours prior to this meeting. Please contact the City Secretary's office at (281) 298-5522 or Fax (281) 367-2225 for further information.

I certify that the attached notice of meeting was posted on the bulletin board at City of Shenandoah Municipal Complex, 29955 IH-45 North, Shenandoah, Texas, on the 17 day of July 2020 at 1:45 o'clock p.m.



Courtney Clary, Assistant Secretary





Shenandoah Municipal Development District AGENDA REPORT

AGENDA DATE:	<u>July 22, 2020</u>	ITEM NUMBER:	<u>4</u>
DEPARTMENT:	<u>Public Works</u>	PREPARED BY:	<u>Joseph Peart</u>
PRICING:	<u>NA</u>	EXHIBITS:	<u>Capital Improvement Plan (CIP)</u>

SUBJECT/PROCEEDING:

Discussion regarding five year Capital Improvement Plan (CIP) with estimated revenues.

RECOMMENDED ACTION:

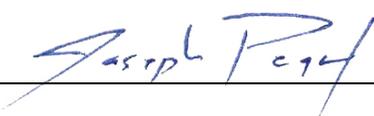
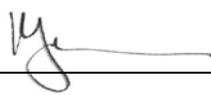
Discussion only.

BACKGROUND/DISCUSSION:

The CIP is a tool for city council to use during budgeting. The CIP details funding requirements for large capital projects that are separate from the operation and maintenance budget. The CIP is grouped with the following categories: Water, Wastewater, Stormwater, Roadways, Parks and Pool, and City Facilities and Equipment.

Following the joint workshop meeting, the MDD Board will discuss capital projects for potential funding and provide staff with a consensus on which projects to include in the budget for the next fiscal year.

APPROVALS:

DEPARTMENT HEAD	<u></u>	DATE:	<u>July 17, 2020</u>
CITY ADMINISTRATOR	<u></u>	DATE:	<u>July 17, 2020</u>



Shenandoah Municipal Development District

AGENDA REPORT

AGENDA DATE: <u>July 22, 2020</u>	ITEM NUMBER: <u>5</u>
DEPARTMENT: <u>Finance</u>	PREPARED BY: <u>Lisa Wasner</u>
PRICING: _____	EXHIBITS: <u>2020 – 2021 MDD Proposed Budget; Eligible Projects Sheet; Capital Project Sheets</u>

SUBJECT/PROCEEDING:

Discussion of 2020 – 2021 MDD Budget

RECOMMENDED ACTION:

Discussion Only

BACKGROUND/DISCUSSION:

Every year the Shenandoah Municipal Development District must produce an annual budget. City staff helps prepare the budget document with reoccurring costs and provides an anticipated surplus/deficit.

A. Proposed Operating Budget

2020 -2021 Proposed Operating Budget	
Revenue	\$ 1,957,924.00
Expenses	\$ 669,647.00
Surplus/(Deficit)	\$ 1,288,277.00

B. Proposed Capital Projects & Purchases – Capital Improvement Plan

The projects listed on the MDD Eligible project sheet are following the current capital improvement plan. MDD can pay for water & sewer, drainage, roadway, and parks & recreational projects. The sheet follows the historical 70% split of the water & sewer projects based on the heavy commercial consumption except the wastewater treatment plant improvements preliminary engineering project.

APPROVALS:

DEPARTMENT HEAD		DATE: <u>July 15, 2020</u>
CITY ADMINISTRATOR		DATE: <u>July 17, 2020</u>

2020 - 2021 Proposed MDD Operating Budget

801-00 MDD Revenue								2020 - 2021 Proposed	2019 - 2020 Adopted	2019-2020 YTD	2018 - 2019 Adopted	2018-2019 Actual	2017-2018 Budgeted	2017-2018 Actual
801-00-51-513000	Sales Tax							1,947,424	2,162,400	1,590,703	1,843,404	2,008,758	1,728,965	2,032,589
	<i>Description</i>	<i>Units</i>	<i>Price</i>	<i>Amount</i>										
	<i>Based on historical</i>	1	1,947,424	1,947,424										
100-00-56-561000	Interest							10,500	10,500	14,208	10,500	34,132	10,000	23,885
Revenue Total								1,957,924	2,172,900	1,604,911	1,853,904	2,042,890	1,738,965	2,056,474
801-15 MDD Expense								2020 - 2021 Proposed	2019 - 2020 Adopted	2019-2020 YTD	2018 - 2019 Adopted	2018-2019 Actual	2017-2018 Budgeted	2017-2018 Actual
801-15-62-620700	Economic Development Partnership							7,500	7,500	7,500	7,500	7,500	7,500	7,500
	<i>Description</i>	<i>Units</i>	<i>Price</i>	<i>Amount</i>										
	<i>The Woodlands Area Economic Development Partnership</i>	1	7,500	7,500										
801-15-67-670300	Public Relations							21,000	21,000	-	26,000	20,000	26,000	20,000
	<i>Description</i>	<i>Units</i>	<i>Price</i>	<i>Amount</i>										
	<i>CSID Agreement</i>	1	20,000	20,000										
	<i>Business Development</i>	1	1,000	1,000										
801-15-67-670900	Dues/Memberships							50	50	-	50	-	350	-
	<i>Description</i>	<i>Units</i>	<i>Price</i>	<i>Amount</i>										
	<i>ICSC Membership</i>	1	50	50										
801-15-67-672000	Engineering							23,024	20,000	6,750	17,000	35,516	-	-
	<i>Description</i>	<i>Units</i>	<i>Price</i>	<i>Amount</i>										
	<i>Retainer</i>	12	1,002	12,024										
	<i>Engineering Services</i>	1	11,000	11,000										
801-15-62-621300	Legal Notices							2,000	2,000	-	-	2,063	-	-
801-15-68-681100	Transfer to General Operating							616,073	596,296	-	626,959	518,641	562,485	519,589
	<i>Description</i>	<i>Units</i>	<i>Price</i>	<i>Amount</i>										
	<i>Financial audit</i>	1	4,800	4,800										
	<i>80% Woodlands Fire Dept. agreement</i>	1	539,777	539,777										
	<i>Administration/CPI personnel (252 hrs. benefits)</i>	1	14,230	14,230										
	<i>Finance personnel (58 hrs. + benefits)</i>	1	2,126	2,126										
	<i>Staff time for projects</i>	1	15,000	15,000										
	<i>25% legal</i>	1	30,000	30,000										
	<i>Police Holiday Overtime</i>	1	9,340	9,340										
	<i>Incode fees</i>	1	800	800										
801-15-68-681400	Transfer to Capital Projects							-	1,892,890	-	938,000	2,761,175	2,103,235	558,080
	<i>Description</i>	<i>Units</i>	<i>Price</i>	<i>Amount</i>										
Expense Total								669,647	2,539,736	14,250	1,615,509	3,344,894	2,699,570	1,105,169
Surplus/(Deficit)								1,288,277	(366,836)	1,590,661	238,395	(1,302,004)	(960,605)	951,305

MDD Eligible Capital Projects 2020 - 2021				
Fund	Project Name	Priority	Cost	MDD Eligible Amount *
Water Plant #2				
Water & Sewer	Motor Control Center (MCC) Replacement	HIGH	\$ 482,000.00	\$ 337,400.00
Water Distribution System				
Water & Sewer	ACP Waterline Replacement - I-45 at Texaco	HIGH	\$ 336,000.00	\$ 235,200.00
Water & Sewer	ACP Waterline Replacement - Memorial Hermann	HIGH	\$ 445,000.00	\$ 311,500.00
Water & Sewer	ACP Waterline Replacement - David Memorial at Vetter	HIGH	\$ 207,000.00	\$ 144,900.00
Water & Sewer	ACP Waterline Replacement - I-45 Crossing at Research	HIGH	\$ 182,000.00	\$ 127,400.00
Wastewater Treatment Plant				
Water & Sewer	Replacement Fencing	HIGH	\$ 44,000.00	\$ 30,800.00
Water & Sewer	WWTP Improvements - Preliminary Engineering	HIGH	\$ 250,000.00	\$ 250,000.00
Equipment				
Water & Sewer	Sewer Inspection Camera System	HIGH	\$ 13,000.00	\$ 9,100.00
Stormwater Conveyance				
General Fund	Wellman Road Bridge - Drainage Expansion	MODERATE	\$ 239,000.00	\$ 239,000.00
General Fund	Holly Hill Reserve	HIGH	\$ 90,000.00	\$ 90,000.00
General Fund	Stormwater Mapping	MODERATE	\$ 50,000.00	\$ 50,000.00
Road Maintenance Projects				
General Fund	David Memorial Extension	HIGH	\$ 257,760.00	\$ 257,760.00
General Fund	I-45 and Research Forest Dr. Intersection Improvements	HIGH	\$ 1,026,250.00	\$ 1,026,250.00
Pathways				
General Fund	Shenandoah Park Drive Roadway Replacement	LOW	\$ 50,000.00	\$ 50,000.00
Park Projects - Main Park				
General Fund	Additional Parking at Toddler Park	LOW	\$ 57,000.00	\$ 57,000.00
General Fund	Main Park Security Cameras	HIGH	\$ 27,000.00	\$ 27,000.00
City Software				
General Fund	Questica Budgeting & Capital Planning Software (25% Share)	HIGH	\$ 5,625.00	\$ 5,625.00
Total Water Sewer Eligible Projects				\$ 1,415,500.00
Total General Fund Eligible Projects				\$ 1,802,635.00
Total Eligible Projects				\$ 3,218,135.00

* MDD Funding for Water & Sewer projects set at the 70% share based on historical funding.

2020-21

Capital Project or Purchase Request Form

MCC Replacement at Water Plant #2



Project # 21-50-01

GL # 000-00-000000

Justification

The MCC is the original from 1984 and experiences regular failures. Replacement is recommended by the city engineers. The MCC is also limited with space and capacity to power additional booster pumps.

City Administrator Comments

City Council Comments

Attachment List

**Engineer's Preliminary Opinion of Cost
City of Shenandoah
May 2020**

WATER PLANT No. 2 - MCC REPLACEMENT

<i>DESCRIPTION</i>	<i>QUANTITY</i>	<i>UNIT</i>	<i>UNIT COST</i>	<i>TOTAL COST</i>
Mobilization, Bonds and Insurance	1	LS	\$17,000	\$17,000
Motor Control Center	1	LS	\$100,000	\$100,000
Autosensory Controls Section	1	LS	\$50,000	\$50,000
Demolition of Existing Motor Control Center	1	LS	\$25,000	\$25,000
Demolition of Existing Electrical Service	1	LS	\$10,000	\$10,000
800A NEMA 3R Main Breaker & Service Rack	1	LS	\$40,000	\$40,000
800A NEMA 3R Automatic Transfer Switch	1	LS	\$30,000	\$30,000
800A Service Duct Bank to MCC	1	LS	\$20,000	\$20,000
New Booster Pump Conductors in Existing Conduit	2	EA	\$10,000	\$20,000
Relocation of Existing Air Compressor	1	LS	\$2,000	\$2,000
Hydrotank No. 2 Conduit and Wire	1	LS	\$10,000	\$10,000
SCADA Modifications	1	LS	\$20,000	\$20,000
Miscellaneous Electrical Work	1	LS	\$20,000	\$20,000
			CONSTRUCTION SUBTOTAL:	\$364,000
			CONTINGENCIES(15%):	\$54,600
			ENGINEERING AND SURVEYING (15%):	\$62,790
			TOTAL:	\$481,390

Notes:

- 1) This estimate was completed without the benefit of detailed design, surveys, or studies and is subject to change based on final design considerations.
- 2) This estimate represents my best judgment as a design professional familiar with the construction industry. Bleyl Engineering has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Therefore, we cannot and do not guarantee that bids will not vary from this cost estimate.
- 3) This estimate does not include replacement of the existing generator. A 450kW generator is estimated at \$350,000.

This Document is Released for the Purpose of:
General Planning
Under the Authority of:
Travis T. K. Walker, P.E.
License No.: 129751
It is Preliminary in Nature and not to be Used for Feasibility of Land Purchases,
Bond Applications, Loans or Grants.

2020-21

Capital Project or Purchase Request Form

David Memorial and David Vetter ACP



Project # 21-50-02

GL # 000-00-000000

Justification

ACP was last used in the 1980s. ACP throughout the city has reached the point that it is prone to leaks and breakages. A proactive approach to replacing ACP will result in fewer unscheduled water outages and help the city meet conservation requirements.

City Administrator Comments

City Council Comments

Attachment List

City of Shenandoah
May 2020

Asbestos Cement Pipe Waterline Replacement - David Memorial at David Vetter

<i>DESCRIPTION</i>	<i>QUANTITY</i>	<i>UNIT</i>	<i>UNIT COST</i>	<i>TOTAL COST</i>
Mobilization, Bonds and Insurance	1	LS	\$7,000	\$7,000
Subsurface Utility Exploration to locate ACP - up to 10 feet deep	10	EA	\$5,000	\$50,000
Pressure Grouting of existing AC Pipe Waterline	325	LF	\$75	\$24,375
8-inch C900 Waterline via open cut	225	LF	\$75	\$16,875
8-inch C900 Waterline with 16-inch Steel Casing via trenchless method	100	LF	\$215	\$21,500
Installation of 8-inch Gate Valve and Box	3	EA	\$2,000	\$6,000
Reconnect Existing Fire Hydrant	2	EA	\$5,000	\$10,000
Reconnect Existing Water Service Leads/meters	2	EA	\$5,000	\$10,000
Asbestos Abatement	1	LS	\$10,000	\$10,000
CONSTRUCTION SUBTOTAL:				\$155,750
CONTINGENCIES (15%):				\$23,363
ENGINEERING AND SURVEYING (15%):				\$26,900
TOTAL:				\$206,013

Notes:

- 1) This estimate was completed without the benefit of detailed design, surveys, or studies and is subject to change based on final design considerations.
- 2) This estimate represents my best judgment as a design professional familiar with the construction industry. Bleyl Engineering has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Therefore, we cannot and do not guarantee that bids will not vary from this cost estimate.
- 3) This estimate assumes the AC Pipe exists from the southerly ROW of David Vetter north to the northern driveway of the Hotel, is grouted and abandoned in place. If removal is required, cost will need to be revisited.
- 4) This estimate assumes no demolition of paving.

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 Bleyl Engineering F-678



2020-21

Capital Project or Purchase Request Form



WWTP Replacement Fencing

Project # 21-50-03

GL # 000-00-000000

FUNDING	
Water and Sewer	\$13,200
MDD	\$30,800
TOTAL	\$44,000

DEPARTMENT	
Water and Sewer	
Capital Project	<input checked="" type="checkbox"/>
Capital Purchase	<input type="checkbox"/>
City Administrator Recommended:	<input checked="" type="checkbox"/>
Council Approved:	<input type="checkbox"/>

R A N K I N G	Requestor	City Admin	
	1	1	
	2	2	
	3	3	
	4	4	
	5	5	
	6	6	
	Meets Goals ⇒	7	7
	8	8	
	Necessity or Safety Requirement ⇒	9	9
10	10		

INITIAL COSTS	
Construction	\$44,000
COST	\$44,000

Joseph Peart

05/27/2020

Requestor

Date

Proposed Project Timeline																																				
Construction	2020												2021												2022											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D

Scope of Project

Replacement of existing cedar fencing at the WWTP with an 8' cedar fence.

Notes

Some existing posts may be able to be re-used, helping to reduce costs.

2020-21

Capital Project or Purchase Request Form

WWTP Replacement Fencing



Project # 21-50-03

GL # 000-00-000000

Justification

The existing fence has been patched numerous times and has been damaged in several locations. The security survey recommended replacement of the fence to provide additional security for the site. Secure facilities are a requirement of TCEQ.

City Administrator Comments

City Council Comments

Attachment List

The Woodlands Home Pros, LLC
3431 Rayford Road Ste. 200-227
Spring, TX 77386 US
(832) 350-4839
david@thewoodlandshomepros.com



Estimate

ADDRESS

Steve Early
City of Shenandoah
29955 Interstate 45 North
Shenandoah, TX 77381

ESTIMATE # 1181

DATE 05/27/2020

EXPIRATION DATE 10/31/2020

DATE	ACTIVITY	AMOUNT
	Fencing Cedar 3-Rail w/6" Rot board * WWTP AT DAVID MEMORIAL & ED ENGLISH - 1450 linear feet* - Installation of 3-rail pressure treated pine framing and WESTERN RED CEDAR pickets - Includes 1" x 6" Rot board along base of fence - 8ft pickets at Ed English site - Ring shank galvanized weather resistant nails/fasteners - Using existing metal posts & frames - Includes demo and disposal of existing wood pickets & wood framing	42,150.00

- Please submit a signed copy of estimate upon acceptance.

- 50% due upon acceptance.

- 50% due on date of completion.

- add \$45 per post if metal posts need to be reinforced with concrete during construction phase. Maintenance supervisor will be notified if any posts are found to need attention.

****NOTE ON DEBRIS REMOVAL****

a 40yard open top dumpster will be placed on site at the WWTP yard during the job for disposal. It will be removed promptly after job completion.

TOTAL

\$42,150.00

Accepted By

Accepted Date

The Woodlands Home Pros, LLC
3431 Rayford Road Ste. 200-227
Spring, TX 77386 US
(832) 350-4839
david@thewoodlandshomepros.com



Estimate

ADDRESS

Steve Early
City of Shenandoah
29955 Interstate 45 North
Shenandoah, TX 77381

ESTIMATE # 1132

DATE 05/27/2020

EXPIRATION DATE 10/31/2020

DATE	ACTIVITY	AMOUNT
	Fencing Pine 3-Rail w/6" Rot board *WWTP AT DAVID MEMORIAL & ED ENGLISH - 1450 linear feet* - Installation of 3-rail pressure treated pine framing and pressure treated PINE pickets - Includes 1" x 6" Rot board along base of fence - 8ft pickets at Ed English site - Ring shank galvanized weather resistant nails/fasteners - Using existing metal posts & frames - Includes demo and disposal of existing wood pickets & wood framing	33,305.00

- Please submit a signed copy of estimate upon acceptance.

- 50% due upon acceptance.

- 50% due on date of completion.

- add \$45 per post if metal posts need to be reinforced with concrete during construction phase. Maintenance supervisor will be notified if any posts are found to need attention.

****NOTE ON DEBRIS REMOVAL****

a 40yard open top dumpster will be placed on site at the WWTP yard during the job for disposal. It will be removed promptly after job completion.

TOTAL

\$33,305.00

Accepted By

Accepted Date

2020-21

Capital Project or Purchase Request Form

WWTP Phase 1 Improvements



Project # 21-50-04

GL # 000-00-000000

Justification

The WWTP is permitted for 1.3 Million Gallons per Day (MGD). Due to equipment and design inefficiencies the WWTP can currently operate at a maximum of .93 MGD. The city's average wastewater flows are currently .625 MGD. As the city continues to develop, flows will increase. The WWTP should be operating at permit levels to maintain quality treatment of the city wastewater and avoid violations of TCEQ permit requirements. With a current treatment capacity of .93 MGD, design is required to start when flows consistently reach .698 MGD. With new development in construction now, this is likely to occur in 2021.

City Administrator Comments

This portion is for design costs only.

City Council Comments

Attachment List

FUTURE EXPANSION

The limiting factors of the existing WWTP recommended to be upgraded consist of:

1. Primary Lift Station
2. Headworks
3. Aeration Basins
4. Clarifiers
5. Chlorine Contact Basin
6. Dechlorination Basin
7. Aerobic Digester
8. RAS Wet Well and Pumping System
9. Belt Press
10. Air Requirements
11. MCC & Emergency Generator
12. PD Blowers

The expansion of the WWTP to serve the City at build-out as well as possible future service areas within the current City's ETJ would occur in four major phases:

Table 6: Expansion Phasing Breakdown

Phase	Capacity (MGD)	WWTP Upgrades	Estimated Cost (\$)
I	1.3	<ol style="list-style-type: none"> 1. Replace blowers, upgrade electrical service, and expand MCC room 2. Upgrade Ed English trunk line (complete) 3. Upgrade generator 4. Repair uneven airflow in chlorine contact basin 5. Extend 3-phase power to chemical building 6. Recoat Clarifier No. 1 bearing ring 7. Modify RAS transfer from Clarifier No. 2 8. Begin building first half of digester complex 9. Convert existing aerobic digesters to aeration 10. SCADA Improvements 11. Modify dewatering method 	\$6,000,000
II	2.0	<ol style="list-style-type: none"> 1. Expansion of first half of digester complex to 2.0 MGD 2. Construction of additional headworks including addition of flow splitter to divide flow between treatment trains. 3. Construct first 1.0 MGD train including 60' diameter clarifier and aeration basin. 4. Construction of additional blower building 5. Conversion of existing 45' diameter clarifier to chlorine contact basin. 6. Upsize lift station pumps 	\$9,000,000
III-A	3.0	<ol style="list-style-type: none"> 1. Construction of second half of aerobic digester complex. 2. Construction of second 1.0 MGD treatment train including 60' diameter clarifier and aeration basin. 	\$8,500,000

III-B	3.0	1. Demolition of original and outdated treatment train, including abandonment, removal, or rerouting of existing piping. 2. Construct third 1.0 MGD treatment train.	\$8,100,000
IV	4.0	1. Construct fourth 1.0 MGD treatment train.	\$8,000,000
		Subtotal	39,600,000
		Contingency (25%)	9,900,000
		TOTAL ALL PHASES	\$49,500,000

The expansion will be built in the remote land north of the original WWTP. The proposed site plan for each phase is provided in **Attachment D**. TCEQ §309.13(e) requires that no residential structures may be located within 150 feet of the nearest primary treatment units. A nuisance odor request must also be submitted per TCEQ §309.13(e)(2) in the form of a report. Recently constructed office condominiums are located directly west of the WWTP site. An easement will need to be obtained to restrict residential development within the buffer zone in the future. The demolition of the plant’s storage building may be considered to minimize the remoteness of the second treatment train and simplify some of the pipe layout. The construction of the second train and placement of the second discharge outfall may trigger a major amendment to the 2018 wastewater permit, which would otherwise require renewal by the year 2023.

As discussed above, the original treatment train will be retrofitted to serve an average daily flow of 1.3 MGD based on the recommendations made in the original WWTP report and the proposed second and third treatment trains will be sized to serve a total additional average daily flow of 2.0 MGD resulting in a total capacity of 3.0 MGD. Because of the space limitation and for simplicity, the second and third treatment trains are proposed to operate separately from the first treatment train utilizing a separate headworks system. The new trains will consist of separate aeration basins, clarifiers, a chlorine contact basin, dechlorination basin, and RAS wet well. We recommend a centralized aerobic digester complex that is sized for the total average daily flow of 4.0 MGD in the event the City future service area demand will require the 4.0 MGD expansion. If a 4.0 MGD expansion is required, the original treatment train including the clarifier, aeration basins, and RAS wet well will be demolished to allow space for two more 1.0 MGD treatment trains identical to the train in Phase II. The City will need to make a decision about the proposed future service area demand before constructing Phase III-A or III-B to make sure the most efficient path is taken to serve the City’s ultimate demand.

Primary Lift Station

The lift station wet well is adequately sized for the peak flow of the existing phase of the permitted flow, but both the pumping capacity and force main require improvements to meet the future demand.

The total existing lift station capacity is 1.54 MGD. As Phase II will increase the plant capacity to 2.0 MGD, it will be required to upsize the wet well and increase the pumping capacity of the Ed English Lift station to accommodate future demand. A new force main will need to be constructed to route flow to the second treatment train. The flow between the existing and proposed treatment trains can be controlled and monitored using valves and flow meters.

Headworks

The existing influent channel of the headworks is hydraulically sized for the design flow of 1.3 MGD. We recommend constructing an additional headworks structure as a part of the proposed plant expansion. A flow splitter will be required in order to equally divide the influent wastewater equally between the existing and

proposed trains. The additional headworks structure would be sized for 2.0 MGD in order to be able to accommodate both of the future 1.0 MGD treatment trains proposed in the future phases. The proposed headworks shall consist of an influent channel, primary automatic screening, and bypass manual screening.

If the City determines it is necessary to pursue phase III-B of expansion, then the original headworks will be demolished and a new headworks will be constructed identical to the headworks of the dual-train system in the phase II and III-A expansions that would serve an average daily flow of 2.0 MGD.

Aeration Basins

The existing aeration basins are not adequately sized for the proposed design flow of 1.3 MGD. The current aeration volume is 66,375 ft³ or 496,485 gallons. The aeration basins are rated for 0.929 MGD at the proposed wastewater strength of 300 mg/L and will need an additional 26,556 ft³ of aeration volume to meet the design flow of 1.3 MGD. We propose to convert the adjacent two existing aerobic digesters into additional aeration basins during Phase I to meet this requirement. This will provide an additional 41,520 ft³ or 310,570 gallons of aeration capacity for a total of 107,895 ft³ or 807,055 gallons. This will allow the future aeration basin for the first treatment train to be rated at 1.51 MGD to meet its design flow. A new centralized aerobic digester complex will be discussed later in this report.

Two (2) aeration basins are proposed for the phase II and III-A expansions that will increase the plant capacity to 3.0 MGD. Per TCEQ §217.154(b)(2) Table F.1, the maximum required organic loading rate is 35 lbs CBOD₅/day for every 1,000 ft³ of aeration basin volume. Using the proposed influent CBOD₅ concentration of 300 mg/L yields a total loading of 5,004 lbs CBOD₅/day. Therefore, the minimum aeration volume required is 142,971 ft³, resulting in each aeration basin requiring 71,485 ft³ of volume to be in accordance with minimum TCEQ standards.

If the City pursues phases III-B and IV of plant expansion, two (2) aeration basins identical to the basins proposed in phase II and III-A should be constructed in place of the original treatment train.

Clarifiers

Existing Clarifier No. 2 is undersized to serve as a redundant clarifier to Clarifier No. 1 and is located remotely away from the first treatment train. Clarifier No. 2 has had regular operational and maintenance concerns. Therefore, we propose to convert Clarifier No. 2 into the Chlorine Contact Basin for the second treatment train. As a result, wastewater flow going through the first and original treatment train is limited by Clarifier No. 1 at 1.117 MGD.

The construction of two (2) identical second clarifier basins is recommended to serve the design flow of 2.0 MGD of the Second Treatment Train that will be constructed in phase II and III-A of the expansion. The proposed clarifiers are sixty feet (60') in diameter for a total surface area of 5,655 ft². TCEQ's maximum required surface loading at peak flow is 1,200 GPD/ft² (§217.154(c)(1) Table F.2). Based upon this surface loading rate, the required minimum surface area for the proposed expansion is 5,000 ft², therefore, the proposed clarifier surface loading rate is adequate for the design peak flow. The proposed SWD in the clarifiers is 16.5 feet, yielding a total volume of 93,291 ft³ or 697,816 gallons. At peak flow (4,167 gpm), the hydraulic detention time is 2.79 hours. The TCEQ required minimum effective detention time at peak flow is 1.8 hours (§217.154(c)(1) Table F.2), therefore, the proposed clarifier volume and hydraulic detention time are adequate for the design peak flow.

If the City pursues phases III-B and IV of plant expansion, two (2) clarifiers identical to the ones proposed in phase II and III-A should be constructed in place of the original treatment train.

Chlorine Contact Basin

As discussed above, we propose to convert Clarifier No. 2 into the chlorine contact basin designated for the second treatment train. The basin will include an influent chamber, two separate trains, an effluent chamber, a single point of effluent measuring, and a NPW system. TCEQ requires that chlorine basins are designed to encourage linear flow through the basin and prevent short-circuiting. This is commonly achieved by installing baffles. The influent and effluent chambers and dual-train design ensure equal flow between the two basins and allow the plant operators to take one train offline to perform maintenance without disrupting flow through the plant. Air will be supplied from the existing centrifugal blowers at the digester complex, and the air diffuser placement will be maximized to provide additional mixing and prevent short circuiting in the basin's corners.

TCEQ §217.281(b)(1) requires a minimum retention time of twenty (20) minutes in the chlorine contact basin at the peak flow rate. At 6,246 gpm, the required minimum volume is 70,840 gallons, or 9,470 ft³. The proposed surface area of the chlorine basin post conversion is approximately 1,590 ft², and assuming a minimum SWD of 10.13-feet (10.13'), the proposed volume is 16,902 ft³, or 126,426 gallons and meets minimum TCEQ requirements.

Dechlorination Basin

One (1) dechlorination basin is proposed for the second treatment train. The total proposed dechlorination basin volume is 285 ft³ and can be built into the proposed chlorine contact basin during its conversion from Clarifier No. 2. As mentioned previously, a dechlorination basin with this volume is rated for a peak flow rate of 9.30 MGD and an average daily flow rate of 3.10 MGD.

Aerobic Digesters

As previously mentioned, we propose to convert the two existing aerobic digesters into additional aeration basins to meet the aeration requirement. This will allow the future aeration basin for the first treatment train to be rated at 1.51 MGD to meet its design flow. We propose the construction of a new centralized aerobic digester complex that will be utilized by both all future treatment trains to serve up to 4.0 MGD. The aerobic digester complex shall eventually have two (2) identical digester basins with a total digester volume of 156,694 ft³ or 1,172,071 gallons and will be constructed in the first three phases of expansion. During phase I, we propose to begin building the first half of the digester complex to serve up to 1.3 MGD. A solids management plan is included as **Attachment C** to compare the capacity of the digester complex based on the TCEQ rules. At the proposed flow rate, the existing digester can hold sludge up to sixty (60) days.

Construction of the digester complex shall precede the modification of the existing treatment train to allow for redundancy during the conversion of the existing aerobic digesters to aeration basins. The air diffusers will also need to be replaced and upsized. Additional research and studies are necessary to determine the required air capacity for the entire wastewater treatment plant.

Return Activated Sludge Wet Well and Pumping System

The RAS wet well and pump station was installed in 2004 to accommodate RAS from Clarifier No. 2. RAS from both clarifiers is hydraulically fed into the wet well via circular pipe. The Sludge Wet Well has been experiencing consistent maintenance issues. We understand from the City operating staff and personal observation that the telescoping valve from Clarifier No. 1 is functioning properly, but the operators cannot achieve a balance in RAS flow from Clarifier No. 2's telescoping valve. The transmission line from Clarifier No. 2 clogged previously on a regular basis if the valve is not opened enough, and when the valve is opened

enough to keep the line from clogging, the operators cannot maintain a balance of RAS flow between the two clarifiers. Since the 2014 report, Clarifier No. 2's telescoping valve has been slightly open, sending RAS to the plant headworks to avoid clogging of the transmission line.

With the recommended conversion of Clarifier No. 2 into the chlorine contact basin for the plant expansion in phase II, the RAS can bypass the Sludge Wet Well. The RAS transmission line will need to be plugged and abandoned. A new Return Activated Sludge Wet Well and Pumping System will be considered during this WWTP expansion.

With the addition of the new clarifiers in Phases II and III-A, the minimum and maximum allowable pumping rates will adjust according to the new clarifier surface area. For Phase II, the new clarifier surface area will be 6,146 ft² resulting in a pumping range of 854 gpm to 1,708 gpm. The existing three pumps each have a firm pumping capacity of 920 gpm

For Phase III-A, the new clarifier surface area will be 8,973 ft² resulting in a pumping range of 1,246 gpm to 2,493 gpm. The existing three pumps each have a firm pumping capacity of 920 gpm resulting in a pumping capacity of 1,840 gpm with one pump on standby. Upsizing of the pumps will be required if the City decides to proceed with Phases III-B and IV of expansion.

Belt Press

The belt press is quite outdated and requires regular maintenance. Operating a belt press becomes less cost efficient at wastewater facilities with a daily average flows greater than 1.0 MGD. The City would like to investigate newer, more efficient sludge dewatering technologies or alternate sludge dewatering and disposal methods in lieu of the on-site polymer solution and belt press. Modifications to the dewatering technology are proposed in Phase I of the plant expansion. Additional studies and consideration will be required to determine the best method of solid disposal for the wastewater treatment plant.

Air Requirements

Table 7: Proposed Phased Expansion Air Requirements

<u>Treatment Unit</u>	<u>Criteria</u>	<u>Air Required After Phase I (scfm)</u>	<u>Air Required After Phase II (scfm)</u>	<u>Air Required After Phase III-A (scfm)</u>	<u>Air Required After Phase III-B (scfm)</u>	<u>Air Required After Phase IV (scfm)</u>
Aeration Basins ⁽¹⁾	TCEQ 217.155(b)(2)(C)	3,263	5,327	7,391	6,192	8,256
Aerobic Digesters ⁽²⁾	20 scfm/1,000 ft ³ (TCEQ 217.249(t)(7)(G))	1,017	1,549	3,098	3,098	3,098
Chlorine Contact ⁽³⁾	15 scfm/1,000 ft ³ (approximated rate)	145	399	399	399	399
Total	n/a	4,425	7,275	10,888	9,689	11,753
150% of Total	TCEQ 217.155(b)(5)(C)(iii)	6,637	10,912	16,332	14,533	17,629

(1) Assuming an influent wastewater rate of 1.3 MGD, the converted original treatment train requires 3,263 scfm and each additional 1.0 MGD treatment train requires 2,064 scf.

- (2) Used minimum required digester complex volume of 156,694 ft³ to serve a total inflow of 4.0 MGD.
- (3) Used chlorine contact basin volume of 26,573 ft³ which includes the existing 9,671 ft³ basin as well as the converted 16,902 ft³ clarifier.

PD BLOWERS

Based on the proposed airflow requirements in *Table 7*, we recommend that the City upsize the existing PD blowers to handle the estimated airflow requirements for the aeration basin and chlorine contact basin of original train of 6,637 scfm and construct a new blower building with sufficient PD blowers to provide air to the two new treatment trains, digester complex, and converted chlorine contact basin. The new blower building will require PD blowers with an estimated total pumping capacity of 16,332 scfm.

MCC AND EMERGENCY GENERATOR

As mentioned previously, the existing electrical is appropriately sized for the current load. With the proposed phased plant expansions, improvements will be required to accommodate the additional electrical load requirements. The electrical report conducted by Baird Gilroy & Dixon in 2016 recommends the upgrade of the electrical service amperage to 1,200 A, the generator to 600 kW, the transfer switch amperage to 1,000 A, and expansion of the MCC room to create space for additional equipment required for future expansion. Replacing the existing outdated blowers with more modern and compact blowers will create additional space in the blower building adjacent to the MCC room. Therefore, the MCC room could be expanded after the blowers are replaced. We recommend the City upgrade the electrical service and expand the MCC room at the same time they replace the existing blowers. Additional study will be required to obtain more specific details on the electric improvements and costs.

ADDITIONAL CONSIDERATIONS

Drainage

During large rain events, the WWTP commonly experiences flooding at the eastern portion of the plant; particularly, the existing chlorine contact basin and chlorination/dechlorination control room and storage building. Bleyl has conducted a preliminary study to analyze the 100 year flood situation. It was determined that during a 100 year storm event waters will rise to the elevation of approximately 127.5 feet. The existing drainage channel located on the eastern boundary of the site is insufficiently sized to handle the flows from the detention pond once the existing pumps are turned on. It was determined that a 730 LF sheetpiled wall or berm with the minimum crest elevation of 128 feet (approximately 2'-4' high) would be sufficient to protect the site and redirect floodwater to the outfall location. Bleyl recommends the addition of this sheetpiling or berm along the eastern and southern sides of the WWTP (see **Attachment E**) to mitigate the flooding problem. Bleyl also recommends the implementation of a manual floodgate to allow for the release of on-site water received via the proposed drainage swale and storm pipe (as shown on **Attachment E**) to the outfall structure located at the intersection of Ed English Dr. and Shenandoah Park Dr.

Table 8: Stormwater Cost Breakdown

Component	Unit	Quantity	Unit Cost	Cost
Sheetpiled Floodwall	SF	2,200	\$100	\$220,000
Drainage Swale	LF	1,000	50	\$50,000
Manual Floodgate	LS	1	\$20,000	\$20,000
Storm Culvert	LF	200	\$30	\$6,000
Subtotal				\$296,000
Contingency (25%)				\$74,000
TOTAL				\$370,000

Fats, Oils, and Grease (“FOG”) Influent Concentration

The City believes the FOG influent concentration is high due to the large number of restaurants within the City’s service area. Excess FOG in the sanitary sewer collection system and WWTP treatment units causes clogging and other maintenance problems. Restaurants are required to install and maintain grease traps in order to prevent excess FOG from entering the City’s system, but, the grease traps often are not maintained by the restaurants and/or do not operate as intended over time. The City does not currently have any codes or ordinances in place to follow up with the grease trap owners to ensure they are properly tested and maintained.

The City has two options to consider to address this problem:

1. Option 1: Additional treatment units can be installed at the WWTP to remove influent FOG. However, without additional data such as influent and effluent concentrations, there is not enough information to know the extent of what treatment units are required. The City would need to gather approximately three (3) months of influent and effluent testing data in order to determine the extent of the additional treatment units required.
2. Option 2: Restaurants are ultimately responsible for the excessive FOG they produce, but the City does not have any means of enforcement. The City should consider passing new ordinances and requirements to ensure restaurants are performing regular maintenance and testing of on-site grease traps, and issue fines if they are not up to code.

Bleyl recommends the City consider option 2 immediately to ensure restaurants are not putting excess burdens on the City’s infrastructure system. Due to the uncertainty of the scope of Option 1, Bleyl did not prepare an estimated cost for FOG treatment units at the WWTP.

TPDES Requirements

Phosphorus nutrient removal is increasingly more common in the wastewater treatment industry, and removal is not achieved by the conventional activated sludge treatment process. Anoxic zones or filtration is required to remove phosphorus, neither of which are included for this project. The proposed aeration basins can be oversized to allow for a future baffle wall to be installed to create an anoxic zone if necessary. A disc filter or similar type media filter with the ability to remove phosphorus can be installed either before or after the chlorine contact basins.

SUMMARY OF RECOMMENDATIONS

Based on the analysis at an assumed wastewater strength of 300 mg/L, the existing WWTP capacity is limited by the aeration basins at 0.93 MGD. Current wastewater strength is 240 mg/L, based on the report from October 2018-September 2019. To meet the current permit of 1.30 MGD, the plant requires improvements to the existing aeration basin, blowers, and digester. These improvements are recommended as Phase I as outlined in the original 2016 report.

Once the existing plant capacity improvements are made, the plant will meet the estimated demands of the proposed and future conditions of 1.14 MGD and 1.22 MGD. Proposed conditions include all the development that has been submitted to the City for review. The future conditions include development of the undeveloped area inside the City limits. Assumptions were made based on the zoning map for undeveloped area inside the City limits.

The WWTP final permit is based on 3.00 MGD, but the estimated future demand including the City's existing ETJ is 3.39 MGD. New aeration basin, clarifier, chlorine basin and an additional digester are required to achieve a capacity of 3.0 MGD. It is recommended that one train be considered when the plant capacity reaches 1.17 MGD which correlates to 90% of 1.30 MGD. The second train should be considered if the plant reaches 1.80 MGD, which correlates to 90% of 2.00 MGD. At this point, the City should also determine whether the future service area demand will exceed 3.0 MGD. If the City determines the capacity of the plant will exceed 3.0 MGD, a permit renewal will be required and we recommend the City demolish the original train and construct two more 1.0 MGD treatment trains in its place for a total capacity of 4.0 MGD. This will also require demolition of some of the existing concrete paving.

The table below shows the proposed phases for development and the necessary plant improvements. At 75% plant capacity TCEQ requires design to begin. At 90% plant capacity TCEQ requires construction of the improvements to begin.

Table 9: Recommended Phasing Schedule

Phases	Demand (MGD)	Design (75%)	Build (90%)	Plant Improvements
Existing Conditions	0.63	-	-	Existing plant capacity is 0.93 MGD.
Proposed Conditions	1.14	.86	1.03	Construct Phase I improvements to meet existing 1.3 MGD capacity. Construct Phase II expansion to 2.0 MGD plant at 90% demand. (If needed for future demand)
Future Conditions	1.22	.92	1.10	None.
Final Permit Phase (Phase III)	3.00	2.25	2.70	Construct Phase III-A or III-B expansion to 3.0 MGD depending on anticipated ultimate service demand.

Ultimate Build-Out of City including ETJ (Phase IV)	3.35	2.51	3.02	Construct Phase IV expansion to 4.0 MGD.
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Table 10 - Summary of Costs

Improvement	Cost
WWTP Phased Expansion and Conversion	\$49,500,000
Drainage Improvements	\$370,000
TOTAL	\$49,870,000

OTHER REQUIREMENTS

1. The permittee shall employ or contract with one or more licensed wastewater treatment facility operators or wastewater system operations companies holding a valid license or registration according to the requirements of 30 TAC Chapter 30, Occupational Licenses and Registrations, and, in particular, 30 TAC Chapter 30, Subchapter J, Wastewater Operators and Operations Companies.

This Category B facility must be operated by a chief operator or an operator holding a Category B license or higher. The facility must be operated a minimum of five days per week by the licensed chief operator or an operator holding the required level of license or higher. The licensed chief operator or operator holding the required level of license or higher must be available by telephone or pager seven days per week. Where shift operation of the wastewater treatment facility is necessary, each shift that does not have the on-site supervision of the licensed chief operator must be supervised by an operator in charge who is licensed not less than one level below the category for the facility.

2. The facility is not located in the Coastal Management Program boundary.
3. There is no mixing zone established for this discharge to an intermittent stream with perennial pools. Chronic toxic criteria apply at the point of discharge.
4. The permittee shall comply with the requirements of 30 TAC § 309.13(a) through (d). In addition, by ownership of the required buffer zone area, the permittee shall comply with the requirements of 30 TAC § 309.13(e).
5. The permittee shall provide facilities for the protection of its wastewater treatment facility from a 100-year flood.
6. The permittee shall comply with 30 TAC § 311.36, which requires the permittees of all domestic wastewater treatment facilities discharging into the Lake Houston Watershed to install dual-feed chlorination systems capable of automatically changing from one cylinder to another if gaseous chlorination is used for disinfection.
7. In accordance with 30 TAC § 319.9, a permittee that has at least twelve months of uninterrupted compliance with its bacteria limit may notify the commission in writing of its compliance and request a less frequent measurement schedule. To request a less frequent schedule, the permittee shall submit a written request to the TCEQ Wastewater Permitting Section (MC 148) for each phase that includes a different monitoring frequency. The request must contain all of the reported bacteria values (Daily Avg. and Daily Max/Single Grab) for the twelve consecutive months immediately prior to the request. If the Executive Director finds that a less frequent measurement schedule is protective of human health and the environment, the permittee may be given a less frequent measurement schedule. For this permit, 1/week may be reduced to 2/month in both phases. **A violation of any bacteria limit by a facility that has been granted a less frequent measurement schedule will require the permittee to return to the standard frequency schedule and submit written notice to the TCEQ Wastewater Permitting Section (MC 148).** The permittee may not apply for another reduction in measurement frequency for at least 24 months from the date of the last violation. The Executive Director may establish a more frequent measurement schedule if necessary to protect human health or the environment.

2020-21

Capital Project or Purchase Request Form

Sewer Inspection Camera



Project # 21-50-05

GL # 000-00-000000

Justification

The city owns a camera that has low resolution, VHS recording, and was purchased in 2007.

City Administrator Comments

City Council Comments

Attachment List



Patterson Equipment Company

P.O. Box 130367
 The Woodlands, TX 77393
 281-770-6714
 jeff@pattersonequipment.net
 www.pattersonequipment.net

Estimate

ADDRESS

City of Shenandoah
 29955 Interstate 45
 Spring, TX 77381
 United States

SHIP TO

City of Shenandoah
 300 Ed English Lane
 Shenandoah, TX 77381
 United States

ESTIMATE 2774

DATE 05/27/2020

EXPIRATION 10/30/2020

DATE

ACTIVITY	QTY	RATE	AMOUNT
VC6-C400C-D46HDN Vivax-Metrotech vCam 6D46-HD/SL *8" High Resolution HD Monitor*One Terabyte Internal Hardrive Memory*Full Function Splash Proof Keyboard*Voice Over Recording*Records to USG,SD Card or HDD*JPEG Still Frame Image Capture*Internal Li-ion Rechargeable Batteries-6 HR Runtime*110V Power Main12V DC*512 Hz Sonde in Spring for Locating*Wi-Fi and Ethernet Interface*Camera to Test Port*400' Type C-Reel - Stainless Steel*1.8" Diameter Self-Leveling HD Camera Head**P" Trap Skid	1	10,800.00	10,800.00
URS-1 Large Roller Centering Guide Skid For 6"-12" Pipe Sizes (6) Nylon Wheels	1	486.00	486.00
VM-540 Locator for Finding Camera Head 512Hz Location & Depth	1	1,042.00	1,042.00
Shipping Estimate Estimate On-Site Training Included	1	295.00	295.00

TOTAL

\$12,623.00

Accepted By

Accepted Date

2020-21

Capital Project or Purchase Request Form

Wellman Road Drainage Improvements



Project # 21-30-01

GL # 000-00-000000

Justification

This area is known to flood during heavy rain events. Inspection of the flow lines indicates that the lines appear undersized and are easily overwhelmed leading to flooding in the roadway. All lanes become impassable during heavy rain events and the road is closed during the flooding.

After the rain event has ended the road is able to drain within one to two hours.

City Administrator Comments

City Council Comments

Attachment List

Engineer's Preliminary Opinion of Cost
City of Shenandoah
May 2020

Wellman Road Bridge - Drainage Expansion

<i>DESCRIPTION</i>	<i>QUANTITY</i>	<i>UNIT</i>	<i>UNIT COST</i>	<i>TOTAL COST</i>
Mobilization, Bonds and Insurance	1	LS	\$9,030	\$9,030
Demolition of Existing Sloped Paving and Headwall	1	LS	\$5,000	\$5,000
36 Inch RCP Storm Sewer, parallel to existing 24 Inch	350	LF	\$175	\$61,250
Remove and Replace Existing "C" inlet, "E" inlet, and Junction box for new pipe.	1	LS	\$25,000	\$25,000
Remove and Replace Concrete Driveway	150	SF	\$10	\$1,500
Remove and Replace existing Concrete Sidewalk	270	SY	\$55	\$14,850
Concrete Slope Paving and Head Wall	1	EA	\$5,000	\$5,000
Dry Utility Relocation/Coordination	1	LS	\$10,000	\$10,000
Waterline Relocation	350	LF	\$80	\$28,000
Landscape/Tree removal and replacement	5	EA	\$3,500	\$17,500
Traffic Control	1	LS	\$12,500	\$12,500
			CONSTRUCTION SUBTOTAL:	\$180,600
			CONTINGENCIES(15%):	\$27,090
			DRAINAGE STUDY OF WELLMAN ROAD:	\$15,000
			ENGINEERING DESIGN AND SURVEYING (15%):	\$31,154
			TOTAL:	\$238,844

Notes:

- 1) This estimate was completed without the benefit of detailed design, surveys, or studies and is subject to change based on final design considerations.
- 2) This estimate represents my best judgment as a design professional familiar with the construction industry. Bleyl Engineering has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Therefore, we cannot and do not guarantee that bids will not vary from this cost estimate.

This Document is Released for the Purpose of:
General Planning
Under the Authority of:
Travis T. K. Walker, P.E.
License No.: 129751
It is Preliminary in Nature and not to be Used for Feasibility of Land Purchases, Bond Applications, Loans or Grants.
Bleyl Engineering F-678

2020-21

Capital Project or Purchase Request Form

Holly Hill Drainage Improvements



Project # 21-30-12

GL # 000-00-000000

Justification

This property is owned by the city and regularly has standing water in several locations long after rain events have ended. The city has made simple storm improvements to the property before to help keep the drainage flowing toward existing storm inlets in Shenandoah Valley and not through backyards. Improvements to the storm system will need to be completed before the land can be converted into a park.

City Administrator Comments

City Council Comments

Attachment List

Attachment A
Scope of Services
Holly Hill Dr. Park Drainage Feasibility
Holly Hill Dr. Park
City of Shenandoah - 29955 IH-45 North, Shenandoah, TX 77381
Attn: Joseph Peart - jpeart@shenandoahtx.us - 832-588-8143
April 3, 2020

- C
- H
- H2
- O

DESCRIPTION	PHASE	BASIS	FEE
1. Feasibility Study	050		
a. Feasibility Report: Perform a feasibility study as it relates to Holly Hill Dr. Park regarding existing drainage. Provide preliminary drainage analysis. The following coordination and research items will be included in the scope of work: Site Visit and Photos, Evaluate Detention and Drainage Requirements, identify potential drainage solutions, Prepare Report and Exhibits with findings and estimated costs.	051	Lump Sum	\$ 9,000.00
Phase Sub-Total:			\$ 9,000.00
2. Sub-Consultant Services	500		
a. Boundary & Topographic Survey (Core Surveying): Provide a topographic survey with boundary verification that includes existing ground elevations, improvements, and a vertical control.	501	Cost + 10%	\$ 4,100.00
Phase Sub-Total:			\$ 4,100.00
3. General Consultation & Coordination	900		
a. Project Coordination: Coordination with City staff, including site visits, report review meeting, phone calls, and meetings.	901	Lump Sum	\$ 2,500.00
b. Reimbursable Fees: Includes reproduction, deliveries, and other non-labor expenses.	902	Cost + 10%	\$ 200.00
Phase Sub-Total:			\$ 2,700.00
Total Fee:			\$ 15,800.00

Notes

1. These fees are presented in the understanding that the Client, if a public entity, has selected Bleyl Engineering for the Project based on qualifications in accordance with state law and is not soliciting competitive proposals on professional services.
2. Scope of work excludes structural/MEP/geotechnical engineering, materials testing, and historical or environmental impact assessments.
3. All permits shall be obtained by Owner or Owner's Representative.
4. Jurisdictional review fees (of drawings) shall be paid by Client or reimbursed at Cost + 10%.
5. Client will be notified of all changes in scope of work and/or changes in estimated fees.

CM: Derek Wind
 PM: Jennifer Steen

Form 1295 Required

CLIENT Initials:

ENGINEER Initials:

2020-21

Capital Project or Purchase Request Form

Storm System Mapping



Project # 21-30-03

GL # 000-00-000000

Justification

The city is responsible for the maintenance and repair of the storm sewer collection system owned by the city. The storm collection system includes road, inlets, collection lines, detention ponds, headwalls, and other appurtenances. Currently the city has no reliable maps to reference when planning storm related projects. The city is also required to maintain a storm water management plan under the city's Municipal Separate Storm Sewer System (MS4). This collection of data will assist in meeting the best management practices of the MS4.

City Administrator Comments

City Council Comments

Attachment List



100 Nugent Street
Conroe, Texas 77301
Phone (936) 441-7833
Fax (936) 760-3833

Engineer's Preliminary Opinion of Cost City of Shenandoah May 2020

STORMWATER MAPPING

<i>DESCRIPTION</i>	<i>QUANTITY</i>	<i>UNIT</i>	<i>UNIT COST</i>	<i>TOTAL COST</i>
Prepare GIS data of existing storm sewer system throughout City.	1	LS	\$20,000	\$20,000
Survey Verification of location, elevation, size, as needed.	1	LS	\$15,000	\$15,000
Prepare presentation of findings, including recommendations to City	1	LS	\$10,000	\$10,000
Preparation of Map showing findings of Storm routing.	1	LS	\$5,000	\$5,000
			TOTAL:	\$50,000

Notes:

1) The intent of this project is to map and provide flow direction of the storm sewer system throughout the City. Modeling is not included in this estimate.

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Bleyl Engineering F-678

2020-21

Capital Project or Purchase Request Form

David Memorial Extension



Project # 21-30-04

GL # 000-00-000000

Justification

Connecting David Memorial Drive to state highway 242 will allow alternate routes for local traffic to pull traffic off of IH-45 service road. It will also allow passage during heavy rain events, when the IH-45 service road floods both in the southbound and northbound lanes. The road will also allow easier access to the city's commercial district on the east side of IH-45.

City Administrator Comments

Interest from Rep. Toth's office and the City of Conroe, and support from Kevin Brady's office, along with potential participation from Moon Group could expedite this project.

City Council Comments

Attachment List



100 Nugent Street
 Conroe, Texas 77301
 Phone (936) 441-7833
 Fax (936) 760-3833

**Engineer's Preliminary Opinion of Cost
 City of Shenandoah
 May 2020**

Shenandoah Park Drive - Roadway Replacement

<i>DESCRIPTION</i>	<i>QUANTITY UNIT</i>	<i>UNIT COST</i>	<i>TOTAL COST</i>
Mobilization, Bonds and Insurance	1 LS	\$1,784	\$1,784
Demolition and removal of existing asphalt (all depths)	245 SY	\$12	\$2,940
Provide and Install 8-inch reinforced concrete pavement	245 SY	\$75	\$18,375
Subgrade Stabilization	275 SY	\$8	\$2,200
6-inch Concrete Curb	50 LF	\$7	\$350
Remove and Replace existing 6:1 SET	2 EA	\$245	\$490
Remove and Replace 18-inch RCP Culvert	45 LF	\$85	\$3,825
Temporary Erosion Control	1 LS	\$2,500	\$2,500
Traffic Control	1 LS	\$3,500	\$3,500
Pavement Marking	1 LS	\$1,500	\$1,500
			\$37,464
		CONTINGENCIES(15%):	\$5,620
		ENGINEERING AND SURVEYING (15%):	\$6,463
		TOTAL:	\$49,546

Notes:

- 1) This estimate was completed without the benefit of detailed design, surveys, or studies and is subject to change based on final design considerations.
- 2) This estimate represents my best judgment as a design professional familiar with the construction industry. Bleyl Engineering has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Therefore, we cannot and do not guarantee that bids will not vary from this cost estimate.

This Document is Released for the Purpose of:
General Planning
 Under the Authority of:
 Travis T. K. Walker, P.E.
 License No.: 129751
 It is Preliminary in Nature and not to be Used for Feasibility of Land Purchases,
 Bond Applications, Loans or Grants.
 Bleyl Engineering F-678

2020-21

Capital Project or Purchase Request Form

Shenandoah Park Drive Roadway Repair



Project # 21-30-05

GL # 000-00-000000

Justification

This section of the roadway on Shenandoah Park Drive Roadway Repair regularly has pot holes due to the slope from the driveway into the Park at Woodmoor apartment complex. The area often has standing water and it undermines the asphalt causing potholes. The project will eliminate the ongoing maintenance costs and further the extension of concrete paving toward IH-45.

City Administrator Comments

City Council Comments

Attachment List



100 Nugent Street
 Conroe, Texas 77301
 Phone (936) 441-7833
 Fax (936) 760-3833

**Engineer's Preliminary Opinion of Cost
 City of Shenandoah
 May 2020**

Shenandoah Park Drive - Roadway Replacement

<i>DESCRIPTION</i>	<i>QUANTITY UNIT</i>	<i>UNIT COST</i>	<i>TOTAL COST</i>
Mobilization, Bonds and Insurance	1 LS	\$1,784	\$1,784
Demolition and removal of existing asphalt (all depths)	245 SY	\$12	\$2,940
Provide and Install 8-inch reinforced concrete pavement	245 SY	\$75	\$18,375
Subgrade Stabilization	275 SY	\$8	\$2,200
6-inch Concrete Curb	50 LF	\$7	\$350
Remove and Replace existing 6:1 SET	2 EA	\$245	\$490
Remove and Replace 18-inch RCP Culvert	45 LF	\$85	\$3,825
Temporary Erosion Control	1 LS	\$2,500	\$2,500
Traffic Control	1 LS	\$3,500	\$3,500
Pavement Marking	1 LS	\$1,500	\$1,500
			\$37,464
		CONTINGENCIES(15%):	\$5,620
		ENGINEERING AND SURVEYING (15%):	\$6,463
		TOTAL:	\$49,546

Notes:

- 1) This estimate was completed without the benefit of detailed design, surveys, or studies and is subject to change based on final design considerations.
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 Bleyl Engineering F-678

2020-21

Capital Project or Purchase Request Form



Additional Parking at Toddler Park

Project # 21-30-06

GL # 000-00-000000

FUNDING	
MDD	\$57,000
TOTAL	\$57,000

DEPARTMENT	
Public Works	
Capital Project	<input checked="" type="checkbox"/>
Capital Purchase	<input type="checkbox"/>
City Administrator Recommended:	<input type="checkbox"/>
Council Approved:	<input type="checkbox"/>

R A N K I N G	Requestor	City Admin
	1	1
	2	2
	3	3
	4	●
	5	5
	6	6
	7	7
	8	8
	9	9
10	10	

Want ⇨

Meets Goals ⇨

Necessity or Safety Requirement ⇨

INITIAL COSTS	
Planning	\$8,000
Construction	\$49,000
COST	\$57,000

Joseph Peart

Requestor

Date

Proposed Project Timeline																																				
	2020												2021												2022											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
	Planning																																			
Construction																																				

Scope of Project

Installation of a parking lot on the north east portion of the Toddler Park. Project will require utility locates, new ramps, and signage. Two off street parking spaces can be added without the removal of trees.

Notes

2020-21

Capital Project or Purchase Request Form

Additional Parking at Toddler Park



Project # 21-30-06

GL # 000-00-000000

Justification

Council requested.

City Administrator Comments

Wait to see how revenues looks next fiscal year.

City Council Comments

Attachment List



100 Nugent Street
 Conroe, Texas 77301
 Phone (936) 441-7833
 Fax (936) 760-3833

**Engineer's Preliminary Opinion of Cost
 City of Shenandoah
 May 2020**

Shenandoah Toddler Park - Additional Parking

<i>DESCRIPTION</i>	<i>QUANTITY</i>	<i>UNIT</i>	<i>UNIT COST</i>	<i>TOTAL COST</i>
Mobilization, Bonds and Insurance	1	LS	\$2,032	\$2,032
Removal and disposal of Trees	3	EA	\$500	\$1,500
Site preparation for parking spaces, including removal of landscaping and sod.	245	SY	\$25	\$6,125
Convert Existing Type "E" inlet to storm manhole.	1	LS	\$3,500	\$3,500
Installation of Type "E" inlet on existing storm line	1	LS	\$4,500	\$4,500
Provide and Install 6-inch reinforced concrete pavement	130	SY	\$65	\$8,450
Subgrade Stabilization	145	SY	\$8	\$1,160
Provide and Install 4-inch concrete sidewalk	200	SF	\$7	\$1,400
Relocation of existing Landscape and Irrigation System	1	LS	\$7,500	\$7,500
Temporary Erosion Control	1	LS	\$2,500	\$2,500
Traffic Control	1	LS	\$2,500	\$2,500
Pavement Marking	1	LS	\$1,500	\$1,500
			CONSTRUCTION SUBTOTAL:	\$42,667
			CONTINGENCIES(15%):	\$6,400
			ENGINEERING AND SURVEYING (15%):	\$7,360
			TOTAL:	\$56,427

Notes:

- 1) This estimate was completed without the benefit of detailed design, surveys, or studies and is subject to change based on final design considerations.
- 2) This estimate represents my best judgment as a design professional familiar with the construction industry. Bleyl Engineering has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Therefore, we cannot and do not guarantee that bids will not vary from this cost estimate.

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2020-21

Capital Project or Purchase Request Form

City Park Video Cameras



Project # 00-00-00

GL # 000-00-000000

Justification

Due to the persistence of vandalism and damage to City property as well as overall safety concerns, it is proposed to install video surveillance cameras at the City Park. Cameras will be installed to monitor the restrooms, pavilion, tennis and basketball courts as well as the playground and splashpad. In addition, hi-definition cameras will be positioned to clearly identify vehicles and license plate numbers for any vehicle entering the parking lot.

City Administrator Comments

City Council Comments

Attachment List

City of Shenandoah Park Video Camera proposal.pdf

Physical Security Proposal

for

City of Shenandoah

29955 Interstate 45 N
Shenandoah, TX 77381

Park Video Surveillance

Revision : 0

Last Modified : 5/11/2020

DataVox TDPS License #B16503

Account Manager

Agustin Zentay

System Design

Kendra Minott



DataVox Texas DIR Vendor Number: 176-025-1479-000

Contract Number: DIR-TSO-3737

DataVox

6650 W. Sam Houston Pkwy S. | Houston, TX 77072 | 713-881-5300

www.datavox.net



DataVox Summary

Since 1988, thousands of businesses have counted on DataVox to be their trusted advanced technology partner. With DataVox, your organization can enjoy the convenience of working with a single company to design, implement and maintain all aspects of their technology needs. From audio visual, to data center, cloud, network technology, network cabling, phone systems and physical security solutions. Our award-winning customer service team is here to assist your organization 24 hours a day, 7 days a week.

Products and Services



Audio Visual



Cisco Systems



Cloud Solutions



Cyber Security



Data Center Technologies



IT Support & Managed Services



Network Cabling



Network Technology



Phone Systems



Physical Security

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EXECUTIVE SUMMARY

System Name	Installed Price
Genetec Upgrade to Omnicast Pro	\$3,366.99
Video Surveillance Software, Licenses and Maintenance Agreement	\$1,973.52
Video Surveillance Cameras	\$11,375.96
Network Equipment	\$2,817.55
Security Cabling	\$4,558.38
DataVox Management Services	\$1,855.42
Total Price (Excludes Sales Tax):	\$25,947.82

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BILL OF MATERIALS

Genetec Upgrade to Omnicast Pro

Video Surveillance

- 215 **Genetec**
Genetec™ Advantage upgrade from Standard to Professional (per camera / 1 month)
- 43 **Genetec**
Upgrade Omnicast Camera Connection from Standard to Professional
- 1 **Genetec**
Upgrade Omnicast Base from Standard to Professional

Video Surveillance Total:	\$3,366.99
----------------------------------	-------------------

Genetec Upgrade to Omnicast Pro Total:	\$3,366.99
---	-------------------

Video Surveillance Software, Licenses and Maintenance Agreement

This section describes the video surveillance software, licenses and maintenance agreement that are required for the security platform.

Video Surveillance

- 80 **Genetec**
Genetec™ Advantage for 1 Omnicast Pro Camera – 1 month
- 8 **Genetec**
Camera License

Video Surveillance Total:	\$1,973.52
----------------------------------	-------------------

Video Surveillance Software, Licenses and Maintenance Agreement Total:	\$1,973.52
---	-------------------

Video Surveillance Cameras

This section lists the video surveillance cameras that DataVox will provide and install for the Customer.

Video Surveillance

- 1 **Axis Communications**
AXIS P3375-LVE Network Camera
Superb, vandal-resistant day-and-night, outdoor dome in 1080p with WDR, Zipstream and OptimizedIR
- 5 **Axis Communications**
Axis P3807-PVE
- 2 **Axis Communications**
AXIS P3245-LVE Network Camera
Streamlined outdoor-ready HDTV 1080p fixed dome for any light conditions
- 5 **Axis Communications**
AXIS T91B47 POLE MOUNT 50-150MM

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- 1 **DataVox**
Customized hardware misc

Video Surveillance Total:	\$11,375.96
Video Surveillance Cameras Total:	\$11,375.96

Network Equipment

This section lists the network equipment that DataVox is responsible for providing and installing.

Video Surveillance

- 1 **Genetec**
StreamVault 300 Series Archiver-only Server

Video Surveillance Total:	\$2,817.55
Network Equipment Total:	\$2,817.55

Security Cabling

This section describes the physical security cabling services that DataVox will provide and install.

- *Cabling routed for horizontal cabling will be routed above the ceiling grid using j-hooks as the support system*
- *Cable pathway bundles will be supported with 1.25" j-hooks*
- *The main cable support pathway will be laid out parallel and perpendicular to major building lines and will follow main hallways where applicable*
- *The secondary cable support paths will be perpendicular to the main pathways*
- *Any firewalls penetrated for cabling purposes will be resealed with a proper fire rated sealant*

Video Surveillance

- 1 **DataVox**
Miscellaneous Cables, Connectors, and Hardware
- 8 **Paige**
GameChanger Cat 6 Cable Segment - 1000ft

Video Surveillance Total:	\$4,558.38
Security Cabling Total:	\$4,558.38

DataVox Management Services

General project oversight including Project Management, Engineering, Training, and Documentation labor as describe in this proposal.

Video Surveillance

- 1 **DataVox Installation**
 - 1 DataVox
Miscellaneous Consumables and Materials

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Park Video Surveillance

DVXB-12619

- 1 DataVox
Project Management - Planning, Scheduling, Order Processing, Construction Meetings and Wrap Up.
- 1 DataVox
Commissioning Services, Testing and Tuning
- 1 DataVox
Design and Engineering Services, CAD Drawings, One-Lines and As-Built Documentation Creation.

	Video Surveillance Total:	\$1,855.42
	DataVox Management Services Total:	\$1,855.42
	Project Subtotal:	\$25,947.82

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SCOPE OF WORK

Genetec Advantage Service Agreement

This scope of work provides a co-termed Genetec Advantage Service Agreement. This agreement starts 30 days after this document is signed and the license is issued. DataVox will assist the user with the service renewal process at the end of each year.

DataVox Assumptions

- Staging of all project equipment will be done at the DataVox facility
- The Customer will provide IP range for cameras prior to installation, including subnet and default gateway
- Any changes in the design or scope of work may result in a charge in the initial quote for the cost of the project
- DataVox is not responsible for existing equipment unless it is stated in the scope of work
- If required, DataVox will be given remote VPN access to the Customer's network during the course of completing this scope of work
- If required, DataVox will be given administrative access to the Customer's network while onsite from a DataVox provided laptop
- DataVox is not responsible for demo of third-party equipment
- Customer will open the necessary ports on their firewall for mobility applications

Customer's initials indicate understanding and acceptance of these assumptions.

Initial

Testing

DataVox will verify full functionality of all security systems that are installed by DataVox.

Out of Scope Services

This section lists the services and/or items that are out of scope per this scope of work.

Security Cameras

- All exterior cameras will be mounted at a height of 12 to 14 feet from the ground unless otherwise specified by the Customer and included in this Scope of Work
- All cameras will be within 300 feet of a network IDF/switch when running category 6 cable segments

Network Equipment

- All active gear, such as network PoE switches
- All rack equipment and patch panels
- UPS/-backup battery

Mapping

- Programming and configuration of maps within the Video and access control system are not included unless otherwise stated within this scope of work.

Conduit

- **All conduit work, coring, boring back boxes, pull strings, and sleeves for all security devices will be provided by others**
- All conduit pipe and 4x4 box to every camera location will be provided by others
 - All exterior conduit must be verified during installation process and cannot necessarily be deemed usable during the site survey or sales process. If conduit is proved to be inefficient (i.e. rotten, crushed or too small for additional cable runs), it will result in a change order

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Scissor Lift

- Customer will provide scissor and/or boom lift and fuel costs for duration of project. Lift must be easily accessible for the duration of the project. If the Customer is unable to provide a scissor or boom lift, DataVox will provide the appropriate lift and bill back the cost of the lift to the Customer

Standard

- Customer will provide space for onsite storage of tools, equipment, and materials for the duration of the project at no cost
- Customer is responsible for the security of project material and equipment that has been delivered and/or installed on the customer's premise
- Anti-Virus software will not be installed on any server provided by DataVox and is the responsibility of the Customer
- Customer will provide DataVox with the appropriate requirements and prints
- Pay a 25% restocking fee on all returnable items
 - Note: Special ordered items are not refundable
- Demo of existing equipment is outside of this scope of work
- Customer will provide installation personnel with access keys or escorts for DataVox to perform the service in a timely and cost-effective manner
- An appointed representative, to act as a single point of contact for the DataVox onsite foreman or personnel, is required. The customer designee will have the authority to execute written change orders upon an agreement of both parties.
- Manufacturer defects for equipment not provided by DataVox are outside of this Scope of Work
- Activation of any non-standard devices that need to operate with access control are not included. This may include but is not limited to, key switches, strobes, and sirens

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BASELINE RESPONSIBILITIES

DataVox Responsibilities

This section lists DataVox's responsibilities for this Physical Security proposal.

- Install all equipment according to manufacturers' specifications, national and local building codes and regulations, and will be in conformity with good engineering practices.
- All equipment will be installed with provisions for the safety of the operator in accordance with the Americans with Disability Act (ADA) guidelines.
- All DataVox staff will dress in a professional manner displaying the DataVox logo, properly using any required Personal Safety Equipment. They will conduct themselves in a professional, courteous and respectful manner to all others present.
- Will maintain a clean working environment, storing tools and equipment when not in use and discarding refuse as often as reasonably possible.
- While DataVox cannot take responsibility for furniture or Customer furnished equipment in the workspace, DataVox will take reasonable precautions to protect all Customer furnished equipment, floors, walls, ceiling tiles, windows and window coverings, and furniture and other surfaces from damage, staining or unreasonable breakage while on site.
- Will appoint a Project Manager (PM) and/or Lead Technician (LT) to oversee the installation. During system implementation, please direct all communications through this designated contact.
- PM or LT will coordinate with other trades to facilitate and expedite project progress. Will inform the Customer of any contractor interference or potential delays which could impede implementation of the Physical Security system, thereby helping to avoid any additional charges.
- Will provide written documentation of any Change Orders (CO) for work requested by the Customer which deviates from the original, approved Proposal and Scope of Works. CO's will be billed at our published labor rates plus materials, shipping, handling, restocking and other charges imposed by suppliers.
- Provide all necessary parts and labor required for complete programming of the physical security solution
- A DataVox engineer will meet with the Customer team to review the necessary programming requirements prior to installation.
- DataVox will only install and configure DataVox provided equipment.
- Provide one-time administrator training.
- Provide the Customer with a 90 day parts and labor warranty, excluding Customer-provided equipment and existing cabling.

Customer Responsibilities

This section lists the Customer responsibilities for this Physical Security proposal.

- Sign off on this Scope of Work prior to installation of equipment.
- Will not require work that is in conflict with any existing agreements with other trades or labor unions.
- Provide space for receipt of project equipment at installation sites.
- Security of project material and equipment, after it is delivered and installed on the customers' premises becomes the responsibility of the customer.
- Provide adequate workspace for the DataVox project team while they are onsite at the Customer's facility.
- Customer will provide DataVox personnel with access, keys, and/or escorts to perform the work in a timely and cost-effective manner. Any delays in the progress of the work will be billed back to the Customer.
- Appoint a representative to act as a single point of contact for the DataVox onsite foreman or personnel. The Customer representative will have the authority to execute written change-orders upon mutual agreement of both parties.
- **IMPORTANT:** Miscellaneous items may be required for completion during project execution which DataVox or the customer did not foresee (for example, copper or fiber patch cables, power cords, and optics.) If miscellaneous items are required beyond what is included in the bill of materials, these items will be provided by the customer or the items can be purchased from DataVox following the standard change management process.

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PROJECT PRICING SUMMARY

Total Installation Price:	\$25,947.82
---------------------------	-------------

Grand Total:	\$25,947.82
---------------------	--------------------

Note: This proposal is valid until 8/9/2020

PURCHASE OPTIONS

Cash Purchase Terms of Payment:

<i>Billing Milestones</i>	<i>Percent Due</i>	<i>Amount Due</i>
Due on Signature	40.00 %	\$10,379.13
Progress Payments	55.00 %	\$14,271.30
Final Payment- Due on Project Completion	5.00 %	\$1,297.39
Total Payments (Excluding Sales Tax):		100 %
		\$25,947.82

Technology Payment :

- 36 Month Lease (FMV):
 - * Payment per month \$840.29
 - * Deposit (2) months \$1,680.59
 - * Payment Excludes Sales Tax

- 60 Month Lease (FMV):
 - * Payment per month \$552.87
 - * Deposit (2) months \$1,105.74
 - * Payment Excludes Sales Tax

Support Service Agreement :

<i>Description</i>	<i>Annual Charge</i>	
Essential Support Service Agreement	12 Hours	\$1,800.00

(Includes a block of hours which gives guaranteed response times (SLA's). This block of hours agreement will be billed upfront and can be used for:

- Updating current software to the latest version*
- Cleaning of cameras*
- Service Related Calls*
- Preventative Maintenance*
- End-User Knowledge Transfer and many other Physical Security related services*

The Block of Hours contract expires at the end of the first year and will be automatically renewed the following year.

For additional information and contract terms regarding Essential support, refer to attached Support Service Agreement

NOTE: The price assumes that all work will be completed during normal business hours, Monday through Friday between 7:00am and 3:30pm. Work requested by the Customer outside normal business hours will incur additional fees. _____ Initial

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ACCEPTANCE OF PROPOSAL

When (but only when) signed by buyer and an authorized representative of DataVox this shall be a binding, legal contract.

The prices, specifications, and conditions in this proposal are satisfactory, and are hereby accepted in their entirety. Buyer hereby agrees to purchase the Equipment and authorizes DataVox to do the work, and provide the materials specified, and payment will be made as outlined above. The price quoted in this Physical Security Proposal is based upon the Equipment included in this Physical Security Proposal. Any changes in the Equipment or installation may result in a change in the price. Any such change must be in writing, signed by all parties.

DataVox reserves the right to modify payment terms at any time based on a review of the Customer's credit.

THIS AGREEMENT, WHEN SIGNED BY BOTH PARTIES (BELOW), SHALL BE GOVERNED BY THE TERMS AND CONDITIONS IN THIS PHYSICAL SECURITY PROPOSAL. THERE ARE NO OTHER AGREEMENTS, OR WARRANTIES, ORAL OR WRITTEN, EXCEPT AS EXPRESSLY STATED IN THIS PHYSICAL SECURITY PROPOSAL. THIS AGREEMENT CANNOT BE MODIFIED EXCEPT IN WRITING SIGNED BY BOTH PARTIES.

Buyer acknowledges having read and understood all of the terms and conditions printed in this Physical Security Proposal and acknowledges receipt of a complete executed copy of this Agreement. Buyer understands and agrees that this Physical Security Proposal and all of the terms and conditions hereof shall be a binding, enforceable contract when signed by Buyer and by an authorized representative of DataVox.

Approval Signatures

IN WITNESS WHEREOF, the duly authorized representatives of the parties hereto have caused this Proposal to be duly executed.

DataVox, Inc.

City of Shenandoah

By: _____
(Signature)

By: _____
(Signature)

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

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TERMS AND CONDITIONS

Please find DIR Terms and Conditions online at the following website:

<http://dir.texas.gov/View-Search/Contracts-Detail.aspx?contractnumber=DIR-TSO-3737>

2020-21 Capital Project or Purchase Request Form

Questica Budgeting & Capital Project Software



Project # 21-12-01

GL # 000-00-000000

Justification

Currently each department enters their proposed budgets into Incode 10. Finance creates several different budget codes for each edit of the budget. Incode does not provide an adequate audit trail, approval process, or work flow process in the limited data entry budget module. This leads to errors, duplication of work, and wasted time.

Questica offers all the requirements that Incode lacks. It also provides a projection tool that will help budget long term which is a recommendation of GFOA (Government Financial Officer's Association). Questica also offers the ability to track capital projects and would be ideal for Joseph's CIP Plan and comes with a suite of customizable reports that would update every night with information imported from Incode.

City Administrator Comments

City Council Comments

Attachment List

Overview Sheet
Email From Questica
Cost Saving Calculator

Better public sector budgeting and performance.



Questica's budgeting, performance and transparency software solutions help government agencies to deliver better outcomes.

Budget

Efficient, accurate and collaborative budgeting all in one.

Questica works with government agencies to better enable data-driven budgeting and decision-making, while increasing data accuracy, saving time and improving stakeholder trust.

Questica Budget Suite drives budget transformation by creating a single source of data truth. Questica Budget is an easy-to-use, comprehensive and collaborative cloud-based solution for operating, capital and salary budget preparation and performance management.

- Better budget process with workflow, approvals and role-based security. Create unlimited what-if scenarios, decision packages and multi-year budgeting.
- Integrates with financial, HR and others systems.
- Position, salary and benefit planning. Staff scheduling and planning.
- Statistical ledger, funding gap/revenue analysis, and capital project planning/reserve analysis.
- Easily assemble actionable data from anywhere in the system for analysis from our Report Center. Create interactive and sharable dashboards, SMART onscreen and/or Print Reports.
- Easily produce reports, financial statements and your annual Budget Book.
- Our Advanced Calculation Engine enables complex modelling for revenue, projections, and activity-based costing.

Over 700 public sector customers use Questica's budgeting solutions including:

- Anchorage, AK
- Champaign, IL
- Clean Water Service, OR
- Denver, CO
- East Hampton, NY
- Fredrick County, MD
- Greensboro, NC
- Goodyear, AZ
- Jacksonville Aviation Authority, FL
- Multnomah County, OR
- New Haven Housing Authority, CT
- Jacksonville Aviation Authority, TX
- Idaho Supreme Court, ID
- Riverside, CA
- Palo Alto, CA
- Seattle, WA
- Shelby County, TN
- Sound Transit, WA
- Southampton, NY

Learn more at questica.com
or schedule a demo with us today!



Performance

Track your progress. Measure your government agency's strategic goals and outcomes.

- A system of programs, measures and scorecards.
- Track an unlimited number of budget and non-budget key performance indicators (KPIs).
- Monitor with user-defined dashboards. Alerts and reminder notifications.
- Interactive analytic tools. Drill down to specific strategies, programs, and initiatives.
- Integrates seamlessly with Qwestica Budget.

“Implementing Qwestica Budget has saved us over \$85,000 in productivity savings annually.”

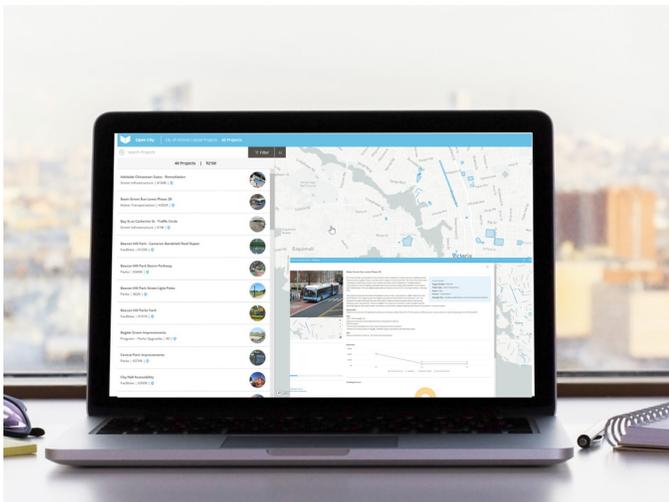
Walter Rossmann, Former Director, Office of Management and Budget, City of Palo Alto, California



OpenBook

Build trust by being transparent and accountable.

- Showcase financial and non-financial data with interactive charts, tables and graphics with descriptive text, and informational pop-ups.
- Share data through all social channels, access via web and mobile.
- Engage with the council, staff, citizens and others in your community for better conversations about programs and services.
- Project Explorer visualization for Capital Budgets allows organizations to display on a map every infrastructure project, including the budget, actual spend, funding sources, and accompanying documentation, images, video, etc.
- Minimize data duplication/re-entry with seamless integration with Qwestica Budget.
- Integrates with Balancing Act's budget simulator tool to promote and support deeper two-way stakeholder consultation and engagement.



“The data (in OpenBook) that provides the most detailed information comes from Qwestica Budget. OpenBook is a straightforward way to graphically display our budget dollars, while only conveying information that the public wanted.”

Meridy Semones, Manager, Office of Management & Budget, The City of Largo, Florida

Learn more at [questica.com](https://www.questica.com) or schedule a demo with us today!

Questica is the recognized leader in budget preparation and management software. Over 700 public sector and non-profit organizations across North America have eliminated spreadsheets, opting for smarter planning, budgeting, management, transparency and engagement with our solutions.

Questica is part of the GTY Technology group of companies. A GovTech 100 company.



Lisa Wasner

From: Kurt Trinder <ktrinder@questica.com>
Sent: Tuesday, June 16, 2020 3:23 PM
To: Lisa Wasner
Subject: Proposal to Council Documents and Info
Attachments: Cost Savings Calculator for Customers.xlsx; US-Government-Solutions-Overview-2019.pdf; BudgetSummary.JPG; CapitalProject.JPG

Hey Lisa,

Thanks for taking the time out of your day today to discuss strategy. I've attached a few documents that may be useful, as well as included info below.. let me know if you need anything else!

Who is Questica:

As a leader of budgeting preparation and management software since 1998, Questica partners with public sector organizations to better enable data-driven budgeting and decision-making, while increasing data accuracy, productivity and improving stakeholder trust. Over 750 local governments, colleges, universities, K-12 schools, hospitals, healthcare facilities and non-profit organizations across 47 states and 11 provinces and territories in North America have eliminated spreadsheets using our budgeting, performance, transparency and engagement solutions which seamlessly integrate with existing financial and other systems.

Our highly scalable solutions have been implemented at organizations managing budgets of a few million to others with multi-billion dollar annual budgets. No organization is too big or too small. Our team is comprised of technology experts, budget professionals and business specialists. We are passionate and friendly collaborators who enjoy teaming with our customers to find the right solution to meet their needs.

Immediate Effect:

- A single source of data truth:
 - Questica is creating a single, central location for any user's budgeting needs. Integrating with current ERP systems, anyone can log into Questica Budget to enter their specific budgeting related items
- Streamlined workflow for individual users:
 - Users are met with easy to understand dashboard and grids (*QuesticaDashboard.PNG*) to quickly understand where they are at with the budget process as well as quickly enter new requests and changes
 - Also see *BudgetSummaryOperating.png* & *BudgetDetailsOperating.png*
- Securable position level budgeting:
 - Budget at the position level, and Questica budget can consider any benefits, union agreements, or grades
 - Similar to the Operating budget summary's, users can determine funding sources, operational impacts, and capital specific information can be logged and tracked right within Questica
- Reporting & Visualization for internal & external stakeholders
 - Questica offers a number of dynamic and print reports out of the box (*ActualvsBudgetMonthlyExample.pdf*).
 - Questica also offers a visualization tool called OpenBook, which seamlessly with Questica Budget and updates as information is provided within the platform. You can find examples listed below:
 - <https://burlington.openbook.questica.com/>
 - <https://largo.openbook.questica.com/>
 - <https://riverside.openbook.questica.com/>

Who uses Questica:

- Questica is used by government offices of varying sizes. A few notable customers include:

- Texas Comptroller's Office
- City of Garland, TX
- City of Conroe, TX
- Fort Bend County, TX
- Texarkana, TX

Product Summary:

Budgeting: Questica Budget Suite drives budget transformation by creating a single source of data truth. Questica Budget is an easy-to-use, comprehensive, and collaborative cloud-based solution for operating, capital and salary budget preparation and performance management.

Reporting: Questica provides 4 categories of reporting capabilities - Print Reports, Smart Reports, Report Builder, and Dashboards. There are 85+ print reports for organizations to choose from, and all reports can be configured to the customer's needs. Smart reports provide onscreen reporting which uses tables and data visualization chart options. All of our reports include data security, so users only see what they're allowed to see. Our dashboards show all of your critical data and other relevant information together in a visually rich and interactive interface. And finally, our report builder provides an advanced self-serve report template which allows for standard headers, footers and logos. In addition, report builder templates include the ability to add new calculated columns and table features.

Performance Measures: Questica allows you to measure your organization's strategic goals and outcomes. We provide a system of programs, measures and scorecards which can track an unlimited number of budget and non-budget key performance indicators (KPIs). This is an interactive analytic tool where you can drill down to specific strategies, programs, and initiatives. Performance measures can be monitored with user-defined dashboards.

Advanced Calculation Engine: Our Advanced Calculation Engine (ACE) is a general purpose calculation system that enables users to create formulas ranging from a single formula in a cell up to large scale mathematical models to do things such as forecasting expenses and revenue from drivers and historical data. ACE's features are designed specifically for budgeting, which allows users to budget in a way that would be difficult in a traditional Excel spreadsheet system.

Financial Statements: This new system-wide module for Questica Budget allows users to configure and generate all three major financial statements, including Income Statements, Balance Sheets, and Cash Flow Statements.

Visualization & Transparency: Questica Openbook allows organizations to showcase financial and nonfinancial data with interactive charts, tables and graphics with descriptive text, and informational popups. Share data through all social channels, and engage with council, staff, citizens, and others in your community for better conversations about programs and services. This program also includes a project Explorer visualization for Capital Budgets which allows organizations to display on a map every infrastructure project, including the budget, actual spend, funding sources, and accompanying documentation, images, video, etc.

Here is a success story of a customer near your size that chose Questica and also uses Tyler:

<https://www.questica.com/news/horizon-city-tx-selects-questica-budget/>

Also see attached for example if capital project usage, or budget summary.

Let me know what else you may need!

Best,

Kurt

Schedule Call: [Click Here](#)



Better [budgeting](#), [performance](#) and [transparency](#) software solutions for the public sector – governments, healthcare, higher education, K-12 schools and non-profits.

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www.questica.com

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Cost Savings Calculator	Enter Client's Numbers
Budget Preparation	
How many weeks does your organization spend preparing the budget?	18
How many employees are involved in preparing budgets including departmental managers?	17
What is the average percentage of work hours devoted to budget preparation?	40%
How many work hours are there in a week?	40
Total number of hours preparing budgets	4896
Average cost per hour	\$35
Total cost of preparing the budget	\$171,360
Budget Management	
How many weeks does your organization spend in managing the budget?	52
How many employees are devoted to managing the budget?	8
What is the average percentage of work hours devoted to budget management?	30%
Total number of hours managing the budget	4992
Average cost per hour	\$35
Total cost of managing the budget	\$174,720
TOTAL COST OF BUDGETING	\$346,080
Enter estimated percentage improvement with Questica Software	40%
COST SAVINGS FROM QUESTICA BUDGET SOFTWARE	\$138,432
Enter estimated percentage improvement with Budget Process Improvement & Change Management	40%
COST SAVINGS FROM PROCESS IMPROVEMENT & CHANGE MANAGEMENT	\$138,432
TOTAL COST SAVINGS	\$276,864
COST SAVINGS OVER 5 YEARS	\$1,384,320



Expense Approval Report By Fund

Payment Dates 06/01/2020 - 06/30/2020

Vendor Name	Payment Date	Payment Number	Description (Item)	Amount
Fund: 801 - SHENANDOAH MUNICIPAL DEVELOPMENT DISTRICT				
BLEYL AND ASSOCIATES	06/03/2020	629	MAY 2020 CITY ENGINEER RETAINER	750.00
Fund 801 - SHENANDOAH MUNICIPAL DEVELOPMENT DISTRICT Total:				750.00
Fund: 802 - Municipal Development District Capital Project Fun				
BLEYL AND ASSOCIATES	06/03/2020	629	APR 2020 TAMINA WEST BOUND TURN LANE @ I45	815.47
BLEYL AND ASSOCIATES	06/03/2020	629	APR 2020 FINAL DESIGN RESEARCH FOREST/TAMINA INTER	10,500.00
BLEYL AND ASSOCIATES	06/03/2020	629	APR 2020 ENGINEERING SERVICES EAST RELIEF POND	4,000.00
A QUALITY PLUS CONSTRUCTION	06/24/2020	630	PARK SURGE PROTECTION	6,200.00
Fund 802 - Municipal Development District Capital Project Fun Total:				21,515.47
Grand Total:				22,265.47

Report Summary**Fund Summary**

Fund	Payment Amount
801 - SHENANDOAH MUNICIPAL DEVELOPMENT DISTRICT	750.00
802 - Municipal Development District Capital Project Fun	21,515.47
Grand Total:	22,265.47

Account Summary

Account Number	Account Name	Payment Amount
801-15-62-621100	Engineer	750.00
802-15-66-663710	Tamina Rd. to I-45 feeder	815.47
802-15-66-663720	Tamina Rd/I-45/Research ...	10,500.00
802-15-66-664601	Park Improvements	6,200.00
802-15-66-669900	Capital Projects	4,000.00
	Grand Total:	22,265.47

Project Account Summary

Project Account Key	Payment Amount
None	21,450.00
PROFESSIONAL SERVICE 00-00-02	815.47
Grand Total:	22,265.47