

## **CITY COUNCIL MEETING**

Monday, July 17, 2023 7:00 PM

Iowa Colony City Hall, 12003 Iowa Colony Blvd., Iowa Colony, TX 77583Phone: 281-369-2471•Fax: 281-369-0005•www.iowacolonytx.gov

THIS NOTICE IS POSTED PURSUANT TO THE TEXAS OPEN MEETING ACT (CHAPTER 551 OF THE TEXAS GOVERNMENT CODE). THE **CITY COUNCIL** OF IOWA COLONY WILL HOLD A **COUNCIL MEETING** AT **7:00 PM** ON **MONDAY, JULY 17, 2023** AT **IOWA COLONY CITY HALL**, 12003 IOWA COLONY BLVD., IOWA COLONY, TEXAS 77583 FOR THE PURPOSE OF DISCUSSING AND IF APPROPRIATE, TAKE ACTION WITH RESPECT TO THE FOLLOWING ITEMS.

Requests for accommodations or interpreter services must be made 48 hours prior to this meeting. Please contact the City Secretary at 281-369-2471.

### CALL TO ORDER

### **INVOCATION**

### PLEDGE OF ALLEGIANCE

### SPECIAL PRESENTATIONS & ANNOUNCEMENTS

Reserved for formal presentations and proclamations.

### CITIZEN COMMENTS

An opportunity for the public to address City Council on agenda items or concerns not on the agenda. To comply with Texas Open Meetings Act, this period is not for question and answer. Those wishing to speak must identify themselves and observe a three-minute time limit.

### **EXECUTIVE SESSION**

*Executive session in accordance with 551.074 of the Texas Gov't Code to deliberate and consult with attorney on the following:* 

1. Discuss personnel matters related to City Manager annual performance appraisal.

### POST EXECUTIVE SESSION

### **PUBLIC HEARINGS**

- 2. Hold a public hearing for a sign variance regarding the height and sign area for a temporary freestanding sign at the Southwest corner of Crystal View Drive and County Road 48.
- 3. Hold a public hearing on the approval of a Crime Control Plan and Budget for the Iowa Colony Crime Control and Prevention District for FY 23-24.

### **COUNCIL COMMENTS**

### **STAFF REPORTS**

- 4. Fire Marshal/Building Official Monthly Report
- 5. Police Department Monthly Report
- 6. Municipal Court Monthly Report
- 7. Public Works Monthly Report
- 8. City Engineer Monthly Report
- 9. Finance Monthly Reports

### **ITEMS FOR CONSIDERATION**

- 10. Consideration and possible action on personnel matters.
- Consideration and possible action regarding a request for a variance to the sign ordinance for a temporary free-standing sign at the Southwest corner of Crystal View Drive and County Road 48.
- 12. Consideration and possible action authorizing the purchase of data servers, telephones, and related components in the amount of \$215,230.22 for the Public Safety Building from DataVox using The Interlocal Purchasing System (TIPS) Cooperative Purchasing Program contract number 230105.
- <u>13.</u> Consideration and possible action for a variance request to section 33 of the subdivision ordinance for Caldwell Lakes
- 14. Consideration and possible action for a variance to section 36 of the subdivision ordinance for Caldwell lakes.
- 15. Consideration and possible action for the Caldwell Lakes General Plan.
- <u>16.</u> Consideration and possible action adopting a Noise Ordinance on first reading.
- <u>17.</u> Consideration and possible action adopting an ordinance amending the Engineering Design Criteria Manual.
- 18. Consideration and possible action on a resolution adopting the Capital Investments Plan (CIP).
- 19. Consideration and possible action on an ordinance adopting a Master Drainage Plan.

### **CONSENT AGENDA**

Consideration and possible action to approve the following consent agenda items:

- <u>20.</u> Consider approval of the June 26, 2023, Council work session minutes.
- 21. Consider approval of the June 26, 2023 Council meeting minutes.
- 22. Consider approval of the June 27, 2023, Council work session minutes.
- <u>23.</u> Consider approval of the Sierra Vista Plaza Final Plat.
- 24. Approval of Quarterly Investment Report

### ADJOURNMENT

I, Kayleen Rosser, hereby certify that the above notice of meeting of the Iowa Colony City Council was posted pursuant to the Texas Open Meeting Act (Chapter 551 of the Texas Government Code) on July 14, 2023.

Kayleen Rosser, City Secretary



I hereby certify that the foregoing agenda remained posted at the entrance to the Iowa Colony City Hall where it was visible to the public at all times and on the City's website for at least 72 hours preceding the scheduled time of the meeting therein described.

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Kayleen Rosser, City Secretary

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

#### IOWA COLONY CRIME CONTROL AND PREVENTION DISTRICT

#### FY23/24 PROPOSED BUDGET

#### **PROGRAM AREA BY ACTIVITY**

#### COMMUNICATIONS DIVISION

These funds will be utilized to provide funding, including salaries and benefits, for three Communication Operators for the Communications Division.

GL Code	Description	Approved FY22/23	Proposed FY23/24
20-20-5101	Salaries – Full-Time		79,124.00
20-20-5104	Salaries – Overtime		2,968.00
20-20-5106	Social Security/Medicare		6,281.00
20-20-5107	TMRS		9,031.00
20-20-5108	Health & Life Insurance		19,200.00
20-20-5109	Worker's Comp		4,216.00
20-20-5110	Texas Workforce Commission		270.00
20-20-5114	Benefits Admin Fees		134.00
20-20-5115	Longevity Pay		0.00
20-20-5117	Certification Pay		0.00

#### OVERTIME

Funds allocated will provide for patrols in neighborhoods identified as needing special attention by law enforcement. These patrols will focus on reducing the crime rate and improving the quality of life for citizens in the affected areas. Funds allocated will also provide for necessary overtime during community relations projects and events.

GL Code	Description	Approved FY22/23	Proposed FY23/24
20-20-5104	Salaries - Overtime	17,000.00	5,000.00

#### **COMMUNITY RELATIONS**

The department will utilize funds for community relations and involvement. Funds will also be used to purchase public relations items for community events.

GL Code	Description	Approved FY22/23	Proposed FY23/24
20-20-5303	Public Education & Training Materials	4,000.00	4,000.00
20-20-5301	Office Supplies	2,500.00	2,000.00
20-20-5214	Advertising & Printing Expense	7,500.00	
20-20-5330	Miscellaneous	1,000.00	1,000.00

#### TECHNOLOGY

Funds will be used to upgrade and enhance technology within the department. This includes upgrades to computers and servers, new computer programs, and various other needs. Funds will also be used to pay for current software licenses, updates, and other technical fees for programs utilized by the police department.

GL Code	Description	Approved FY22/23	Proposed FY23/24
20-20-5314	Computer & Technology Equipment	25,000.00	25,000.00
20-20-5315	Computer Software & License	16,000.00	18,500.00
20-20-5230	Radio Service	5,100.00	5,400.00
20-20-5328	Small Tools & Minor Equipment	11,000.00	5,000.00

#### INVESTIGATIONS

Funds allocated will be used to provide equipment and training to conduct complex criminal investigations.

GL Code	Description	Approved FY22/23	Proposed FY23/24
20-20-5222	Investigations	4,000.00	1,600.00
20-20-5307	Investigation Supplies	4,000.00	776.00

#### TRAINING

The department will utilize these funds to pay tuition, per-diem, and travel-related expenses for officers to attend specialized training in various topics.

GL Code	Description	Approved FY22/23	Proposed FY23/24	
20-20-5223	Training & Travel	15,000.00	10,000.00	

#### PATROL EQUIPMENT

These funds will purchase upgrades to equipment and new equipment, as well as maintain existing equipment for patrol officers. Items include but are not limited to, window tint meters, portable breath testers, speed lidars, and other equipment for use by officers in the field.

GL Code	Description	Approved FY22/23	Proposed FY23/24
20-20-5316	Equipment Repair/Parts	5,000.00	5,000.00
20-20-5317	Equipment & Other Rentals	4,000.00	4,000.00
20-20-5319	Vehicle Repairs & Maintenance	3,900.00	

#### **PROFESSIONAL SERVICES**

These funds will be utilized for outside services that provide customized, knowledge-based services to the police department.

GL Code	Description	Approved FY22/23	Proposed FY23/24
20-20-5206	Professional Services	10,000.00	7,500.00

#### **ONE-TIME PROJECTS**

These funds will be used or encumbered for larger projects such as police department vehicles with associated equipment, personal protective equipment, forensic mapping tools, and other projects.

GL Code	Description	Approved FY22/23	Proposed FY23/24
20-20-5223	Training & Travel*		10,000.00
20-20-5314	Computer & Technology Equipment*		10,000.00
20-20-5317	Equipment & Other Rentals*		8,000.00
20-20-5650	Vehicles & Machinery*	75,000.00	75,000.00
20-90-5630	Furniture & Equipment*	250,000.00	
20-20-5309	Uniforms*		5,000.00

\*One-time expenditures from the fund balance. Fund Balance September 30, 2022 - \$368,320.00 Proposed Expenditures this budget - \$108,000.00 Remaining Balance - \$260,320.00

#### NOTICE OF PUBLIC HEARING

The Iowa Colony City Council will hold a public hearing at 7:00 p.m. on July 17, 2023, in the Council Chambers at Iowa Colony City Hall, 12003 Iowa Colony Boulevard, Iowa Colony, Texas concerning the approval of a crime control plan and budget of the Iowa Colony Crime Control and Prevention District for fiscal year 2024. The public may speak or present evidence for or against the proposed crime control plan and budget, copies of which are available from the Iowa Colony City Secretary at krosser@iowacolonytx.gov

Kayleen Rosser, Iowa Colony City Secretary



12003 Iowa Colony Blvd. Iowa Colony Tx. 77583 Phone: 281-369-2471 Fax: 281-369-0005 www.iowacolonytx.gov

### **MONTHLY REPORT- June 2023**

July 12, 2023

Mayor and Council,

See June 2023, monthly report for Building Department, Code Enforcement/Animal Control, Community Development and Fire Marshal's Office below.

<b>Building Department</b>				
Inspections Conducted by BBG-		Inspections Conducted by In-Hous		
Inspector				
Building Inspections-	226	Building-	233	
Plumbing Inspections -	474	City Ordinance Violations-	23	
Mechanical Inspections-	106	Animal Control Violations-	33	
Electrical Inspections-	281			
Total-	1087	Total-	289	

Inspections paid to BBG for June 2022 total of 1202 Inspections- \$27,045.00

June fees paid for Inspection services to BBG Consulting, Inc.:

June 2023, Total Inspections 1087

Total paid to BBG <u>\$24,457.50</u>

Building Department: A total of <u>76</u> Plan reviews for construction were conducted.

66- New Residential 3- Swimming Pools

## Permits Issued: 2022- <u>155</u>

Other Permits- 58	New H	Iomes- 84	Civil Project	rs- 13
2023- 161				
Other Permits- 66	New H	Iomes- 82	Civil Project	is- 13
Permit Fees Collec	ted:			
2022- <u>\$306,909.56</u>				
New Homes- \$191,0	)41.66	Other Permi	t- \$36,300.64	Civil Fees- \$79,567.26
2023- <u>\$237,248.83</u>				
New Homes- \$139,9	984.36	Other Permi	t- \$42,774.47	Civil Fees- \$54,490.00

### **Fire Marshals Report:**

On June 3, 2023, we partnered up with Meridiana Oasis Village to host a Touch-A-Truck event. The event was a success we were able to obtain the following vehicles. Ladder Truck from Alvin FD, Herman Life Flight Helicopter, Iowa Colony VFD Fire truck, Local Army Reserve brought out 2- Humvee's, Iowa Colony Police, Animal Control and Fire Marshal vehicles, Large Dump truck and Tractor. We also had a few food trucks participate.

Thanks,

A

Albert Cantu, Fire Marshal/Building Official



### IOWA COLONY CODE COMPLIANCE DEPARTMENT

12003 Iowa Colony Blvd Iowa Colony, TX. 77583 Ruben Garcia Jr Code Compliance Officer Phone (346) 395-4543 rgarcia@iowacolonytx.gov

### June 2023

### **CODE COMPLIANCE / ANIMAL CONTROL / INSPECTIONS**

289 Calls for Service, for Code Compliance/Health, Animal Control, Inspection/Permits

Code Compliance/Health Inspection	23	<ul> <li>(1) Live Wire – CenterPoint called out / Meridiana @ ICB</li> <li>(2) Illegal Dumping – Verbal Warning-Lennar Homes / Written Warning-Anglia Homes - ABATED</li> <li>(2) No Dirt Permit – 2345 CR 62 – ABATED / 7710 IBC - ABATED</li> <li>(1) Meridiana Welcome Center / Event – Touch a Truck</li> <li>(1) Trash Fire – 12323 Pursley Abated</li> <li>(1) Grass Fire – Meridiana @ IBC – Fire put out</li> <li>(1) Fire Inspection – 2944 Meridiana Pkwy Domino's Pizza - PASS</li> <li>(8) Stake Sign – 18 Sign P/U</li> <li>(1) Health Concern – Temp. Toilet knocked over – called owner - ABATED</li> <li>(5) Health Inspection – Mobil Unit –Sea Soul Food – Re-New Lemon Tails- Re-New, Snowie Ice &amp; Ice Cream Truck Re-New The Scoop – NEW, Glenda Food Truck - NEW</li> </ul>
Animal Control	33	<ul> <li>(14) Animal at Large - 13 dog calls / 1 cat call</li> <li>(1) Animal Impound – CollieX / dropped off at Houston Humane</li> <li>(2) Animal Bite – Animal Completed Quarantine - No sign of disease</li> <li>(2) ACO Patrol – Meridiana Subdv / Sterling Lakes / City Limits</li> <li>(4) Animal Welfare – all calls ABATED</li> <li>(3) DOA animals – 1 moved off roadway / 2 Unable to located</li> <li>(1) Wildlife Calls – Alligator – advise given to caller</li> <li>(3) Loose Livestock – all livestock put back in pasture</li> <li>(3) Lost Dogs – Information taken and entered in system</li> </ul>
Inspection/Permits 233		<ul> <li>(56) Driveway/Sidewalks – 37 PASS / 19 FAIL</li> <li>(128) Pre-Pour Foundations – 105 PASS / 23 FAIL</li> <li>(35) Electrical T-Pole – 30 PASS / 5 FAIL</li> <li>(4) Pool Stake Out – PASS</li> <li>(4) Belly Steel – PASS</li> <li>(3) Deck &amp; Ditch - PASS</li> <li>(2) Pool Final - PASS</li> <li>(1) Sidewalk - PASS</li> </ul>

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Item 4.







# IOWA COLONY POLICE DEPARTMENT

12003 Iowa Colony Blvd.

Iowa Colony, Texas 77583

Aaron I. Bell Chief of Police Phone: (281) 369-3444 Fax: (281) 406-3722

#### Monthly Report June 2023

Offense	May 2023	June 2023
Burglary	0	0
Theft	1	3
Robbery	1	0
Total Index Crimes Reported	2	3
Reports Taken		
Misdemeanor	19	13
Felony	3	3
Charges Filed/Arrests		
Misdemeanor	9	2
Felony	2	0
Outside Agency Warrant Arrest	1	3
Traffic Enforcement		
Citations	384	397
Crash Investigations		
Minor Crashes	10	11
Major Crashes	3	1
Fatality Crashes	0	0
Calls for Service		
Alarms	35	30
Assist Other Agency	31	29
Disturbance	20	14
Other	139	99
Security Checks	513	357
Suspicious Activity/Persons	27	34

Significant Events

- June 3 Officers were dispatched to the area of SH 288/Cedar Rapids Pkwy in reference to a
  disturbance that occurred inside a vehicle while driving down the road. A report was generated
  and referred to investigations.
- June 3 Officers were dispatched to the 2800 block of Sterling Lakes Dr regarding a disturbance. The victim stated someone had approached her and poked her several times. A report was generated.
- June 12 Officers were dispatched to the 9400 block of Ivory Trail Ln regarding a theft. The victim stated she believed someone stole a package that had been delivered off her porch. A report was generated.



# IOWA COLONY Police Department

Item 5.

12003 Iowa Colony Blvd. Iowa Colony, Texas 77583 Aaron I. Bell Chief of Police Phone: (281) 369-3444 Fax: (281) 406-3722

- June 14 While on another call for service, Officers were told about an assault that had
  previously occurred in the 9900 block of Onyx Trail Dr. The victim stated her son had assaulted
  her. A report was generated and forwarded to the Brazoria County District Attorney's Office for
  review.
- June 16 Officers were dispatched to the 100 block of Kiowa Ct regarding a disturbance. While
  on scene officers learned of an incident involving child endangerment that had occurred the
  previous day. A report was generated and forwarded to the Brazoria County District Attorney's
  Office for review.
- June 22 Officers were dispatched to the 140 block of Kiowa Ct regarding a disturbance. While on scene one of the individuals involved was found to have an outstanding arrest warrant from the Pearland Police Department. The individual was detained and later turned over to the Pearland Police Department.
- June 22 Officers were dispatched to the 9800 block of Garnet Grove Dr regarding harassing phone calls. The victim stated her ex-fiancé, who she has a protective order against, had called her and harassed her. A report was generated and an arrest warrant was obtained.
- June 25 Officers counducted a traffic stop on a vehicle on SH 288/Cedar Rapids Pwky for speeding. The driver of the vehicle was found to have outstanding arrest warrants through Waller County. The driver was detained and transported to the Brazoria County Jail.
- June 27 Officers were flagged down in the 3300 block of Meridiana Pkwy and advised of a theft. The victim said some items had been stolen by an unknown person from the convivence store a short time earlier. A report was generated.

## City of Iowa Colony Municipal Court Council Report From 6/1/2023 to 6/30/2023

Violations by Type											
Traffic	Penal	City Ordinance	Parking	Other	Total						
414	1	4	0	0	419						
Financial											
State Fees	Court Costs	Fines	Tech Fund	Building Security	Total						
\$30,066.42	\$24,586.55	\$19,097.20	\$1,213.05	\$1,482.18	\$76,445.40						
Warrants											
Issued	Served	Closed			Total						
0	0	0			0						
FTAs/VPTAs											
FTAs	VPTAs				Total						
0	0				0						
		Dianaai	tiono								
	New Ceek Credit	Disposi		Deferred	Tabal						
Paid	Non-Cash Credit	Dismissed	Driver Safety	Deferred	Total						
99	0	63	41	141	344						
		Trials & H	earings								
Jurv	Bench	Appeal	J.		Total						
0	0	0			0						
		Omni/Scofflaw	v/Collection								
Omni	Scofflaw	Collections			Total						
0	0	0			0						

1

NO.         LOCKTON         DESCRIPTION         NOTES         STATUS         DATE COMPLETED           A         Street SIGNAGE         sign turned around         one         67728           2         Uster Rwy @ Iowa Colony         remove the post         Done         67728           3         Ister Pkwy @ Iowa Colony         Replace new post         Done         67728           4         Ister Pkwy @ Iowa Colony         remove the stop sign         Done         67728           5         Ister Pkwy @ Iowa Colony         remove the stop sign         Done         67728           6         Ister Pkwy @ Iowa Colony         replace the storet sign         Done         67784           6         Ister Pkwy @ Iowa Colony         Replace the storet sign         Done         67784           7         Ister Pkwy @ Iowa Colony         Replace the storet sign         Done         67784           8         Ame @ CA & Colony         Replace the storet sign         Done         67784           9         Davenout pkwy         Leaning Stop sign         Done         67784           9         Davenout pkwy         Leaning Stop sign         Done         674742           9         Davenout pkwy         Leaning Stop sign         Done						
A         Street SIGNAGE         sign turned around         Done         67782           1         Cr 786 Cedar Rasids         40 M.p.h         sign turned around         Done         6777420           2         Bitter Phary @ Ibwa Colony         Replace new post         Done         6777420           3         Bitter Phary @ Ibwa Colony         Replace new post         Done         6777420           4         Bitter Phary @ Ibwa Colony         replace the stop sign         Done         6777420           5         Bitter Phary @ Ibwa Colony         replace the stop sign         Done         677420           6         Bitter Phary @ Ibwa Colony         replace the stop sign         Done         677420           8         Ames @ RA2         Leaning sign         Done         677420           9         Dureport phary @ Ibwa Colony         Replace the strest sign         Done         677420           9         Dureport phary @ Ibwa Colony         Replace the strest sign         Done         677420           9         Dureport phary @ Ibwa Colony         Replace the strest sign         Done         674742           10         Demarc Colony Dhary         Leaning Stop sign         Done         674742           10         Demarc Colony Dhary	NO.	LOCATION	DESCRIPTION	NOTES	STATUS	DATE COMPLETED
1     1.7.89 Cdar.Bapds     40 M.h.h     sign turned around     Done     -07724       2     Bister Phavy @ lowa Colony     Replace new post.     Done     -07724       3     Bister Phavy @ lowa Colony     remove the stop sign.     Done     -07724       4     Bister Phavy @ lowa Colony     remove the stop sign.     Done     -07724       5     Bister Phavy @ lowa Colony     remove the stop sign.     Done     -07724       6     Bister Phavy @ lowa Colony     remove the stop sign.     Done     -07724       7     Bister Phavy @ lowa Colony     remove the stop sign.     Done     -07724       8     Bister Phavy @ lowa Colony     Replace the stop sign.     Done     -07724       9     Davemout David Colony     Replace the street sign.     Done     -07724       9     Davemout David Colony     Replace the street sign.     Done     -07724       9     Davemout David Colony David David Colony Phavy     Leaning Stop sign.     Done     -07742       9     Davemout David Colony David Dav	A	Street SIGNAGE				
2     Bister Placy @ lova Colony     Pende new post     Done     6/7724       3     Bister Placy @ lova Colony     remove the stop sign     Done     6/7724       4     Bister Placy @ lova Colony     remove the stop sign     Done     6/7724       5     Bister Placy @ lova Colony     remove the stop sign     Done     6/7724       6     Bister Placy @ lova Colony     remove the stop sign     Done     6/7724       7     Bister Placy @ lova Colony     Replace the street sign     Done     6/7724       8     Ames @ CR 62     Leaning sign     Done     6/7724       9     Daveport placy @ lova colony placy     Leaning sign     Done     6/7724       9     Daveport placy @ lova colony placy     Leaning sign     Done     6/7724       9     Daveport placy @ lova colony placy     Leaning sign     Done     6/7724       9     Daveport placy @ lova colony placy     Leaning sign     Done     6/7724       10     Differ Placy @ lova colony placy     Trash Plack up     Done     6/7724       20     Differ Placy @ lova colony placy     Trash Plack up     Done     6/7724       21     Differ Streter NMINC     Tree down     Con     6/64/724       2     Lova colony     Grass cut     Done <t< td=""><td>1</td><td>Cr 78@ Cedar Rapids</td><td>40 M.p.h</td><td>sign turned around</td><td>Done</td><td>6/7/2023</td></t<>	1	Cr 78@ Cedar Rapids	40 M.p.h	sign turned around	Done	6/7/2023
3     Bister Plavy @ lova Colony     Replace new port     Done     -07720       4     Bister Plavy @ lova Colony     replace the stop sign     Done     -07720       5     Bister Plavy @ lova Colony     replace the stop sign     Done     -07720       6     Bister Plavy @ lova Colony     replace the stop sign     Done     -07720       7     Bister Plavy @ lova Colony     Replace the store sign     Done     -078720       7     Bister Plavy @ lova Colony     Replace the store sign     Done     -078720       8     Ames @ CR 62     Leaning sign     Done     -078720       9     Davenopt rakry @ lova Colony plavy     Leaning sign     Done     -078720       9     Davenopt rakry @ lova Colony plavy     Leaning sign     Done     -078720       9     Davenopt rakry @ lova Colony plavy     Leaning sign     Done     -079740       10     BIST REMOVAL     Image     Image     Done     -079740       11     Bullard Plavy @ CR 79     Trae down     Image     Done     -0797470       11     Bullard Plavy @ 288 (S)     Pethole     Done     -07974780       12     SUTREET REPAIRS     Done     -07974780       13     Loland Plavy @ 288 (S)     Pethole     Done     -07974780   <	2	Bister Pkwy @ Iowa Colony	remove the post		Done	6/7/2023
A Bister Plavy @ Iova Colony     remove the stop sign     Done     6/772       S Bister Plavy @ Iova Colony     remove the stop sign     Done     6/8743       B Bister Plavy @ Iova Colony     remove the street sign     Done     6/8743       B Bister Plavy @ Iova Colony     Replace the stop sign     Done     6/8743       B Bister Plavy @ Iova Colony     Replace the street sign     Done     6/8743       B Anes @ Ch 62     Lening sign     Done     6/8743       D Dene Distribution     Lening sign     Done     6/8743       D Dene Distribution     Done     6/8743     6/8743       D Dene Distribution     Done     6/26743     6/26743       D Dene Distribution     Trash Pick up     Done     6/26743       D D Dene Distribution     Trash Pick up     Done     6/26743       D Dene Distribution     Grass cut     Done     6/26743       D Nor Colony Divo     Grass cut     Done     6/24743       D Nor Colony Bivion     Parkes     Parkes     Done     6/24744       D Nor Colony Divo     Parkes     Park	3	Bister Pkwy @ Iowa Colony	Replace new post		Done	6/7/2023
S Bister Placy @ lowa Colony     replace the stop sign     Done     6/8/720       G Bister Placy @ lowa Colony     Replace the street sign     Done     6/8/720       B Ames @ CR 62     Leaning sign     Done     6/8/720       9 Davemport placy @ lowa Colony plaw     Replace the street sign     Done     6/8/720       9 Davemport placy @ lowa Colony plaw     Leaning Stop sign     Done     6/8/720       9 Davemport placy @ lowa Colony plaw     Leaning Stop sign     Done     6/8/720       1 Cr 190 @ lowa Colony plaw     Trash Plck up     Done     6/2/720       20     C     MWING/TREE TRIMMING     Done     6/2/720       1 Cr 190 @ lowa Colony blad     Trash Plck up     Done     6/2/2/720       20     C     Grass cut     Done     6/2/2/720       1 Bullard plavy @ CR 79     Tree down     Done     6/2/2/720       2 lowa colony     Grass cut     Done     6/2/2/720       3 lowa colony     Grass cut     Done     6/2/2/720       2 Deverpt plaw @ Blay     Pothole     Done     6/1/2/720       3 lowa colony blad     Pothole     Done     6/1/2/720       3 lowa colony blad     Pothole     Done     6/1/2/720       3 lowa colony blad     Pothole     Done     6/1/2/720       4 low	4	Bister Pkwy @ Iowa Colony	remove the stop sign		Done	6/7/2023
6     Bister Pkwy @ lowa Colony     remove the street sign     Done     -6/8724       7     Bister Pkwy @ lowa Colony     Replace the street sign     Done     -6/8724       8     Ames @ CR 62     Leaning sign     Done     -6/8724       9     Davenport pkwy @ lowa Colony pkwy     Leaning sign     Done     -6/8724       9     Davenport pkwy @ lowa Colony pkwy     Leaning sign     Done     -6/8724       9     Davenport pkwy @ lowa Colony pkwy     Leaning sign     Done     -6/8724       10     Die @ Lowa Colony bkd     Trash Pick up     Done     -6/26728       20     Trash Pick up     Done     -6/26728       20     Tree down     Done     -6/26728       20     Tree down     Done     -6/26728       21     Builard pkwy @ CR 79     Tree down     Done     -6/24724       2     Iowa Colony W     Grass cut     Done     -6/24724       3     Iowa Colony W     Grass cut     Done     -6/24724       3     Iowa Colony W     Frass cut     Done     -6/24724       3     Iowa Colony W     Pothole     Done     -6/24724       4     Ioua Colony W     Pothole     Done     -6/14724       5     Frido y Bindowy Bindowy <t< td=""><td>5</td><td>Bister Pkwy @ Iowa Colony</td><td>replace the stop sign</td><td></td><td>Done</td><td>6/8/2023</td></t<>	5	Bister Pkwy @ Iowa Colony	replace the stop sign		Done	6/8/2023
7     Bister Pkory @ lowa Colony     Replace the street sign     Done     6/6/9/28       8     Ames @ CR 62     Leaning sign     Done     6/6/9/28       9     Davenport plkvy@ lowa colony pkvy     Leaning sign     Done     6/6/9/28       8     DEBRIS REMOVAL     Image: Colony blvd     Trash Pick up     Image: Colony blvd     Image: Colo	6	Bister Pkwy @ Iowa Colony	remove the street sign		Done	6/8/2023
8 Ames@CR 62       Leaning sign       Done       6/9782         9 Davenport pkwy@lowa colony pkwy       Leaning Stop sign       Done       6/10782         9 Davenport pkwy@lowa colony pkwy       Leaning Stop sign       Done       6/10782         1 Cr 190@ lowa Colony blwd       Trash Pick up       Done       6/26782         20       Trash Pick up       Done       6/26782         20       Done       6/26782       6/26782         20       Trash Pick up       Done       6/267424         20       Done       6/267424       Done       6/247424         21 Bullard pkwy @ CR 79       Tree down       Done       6/247424         3 Iowa colony       Grass cut       Done       6/247424         3 Iowa colony       Grass cut       Done       6/247424         2.       STREET REPAIRS       Pothole       Done       6/147424         3 Iowa colony bkd       Pothole       Done       6/147424         4 Iowa colony bkd       Pothole       Done       6/147424         3 Iowa colony bkd       Pothole       Done       6/147424         4 Iowa colony bkd       Pothole       Done       6/147424         4 Iowa colony bkd       Pothole       Don	7	Bister Pkwy @ Iowa Colony	Replace the street sign		Done	6/8/2023
9     Davenport pkwy @ lowa colony pkwy     Leaning Stop sign     Done     6/10/20       1     DEBRIS REMOVAL     Image: Stop Sign     Done     6/10/20       1     Cr 190 @ lowa Colony blvd     Trash Pick up     Done     6/26/20       20     Image: Stop Sign     Done     6/26/20       21     Bullard pkwy @ CR 79     Tree down     Done     6/24/20       2     Iowa colony     Grass cut     Done     6/24/20       3     Iowa colony     Grass cut     Done     6/24/20       3     Iowa colony     Grass cut     Done     6/24/20       3     Iowa colony blvd     Pothole     Done     6/14/20       2     Davenport pkwy @ Pkwy 288 (S)     Pothole     Done     6/14/20       2     Davenport pkwy @ Pkwy 288 (N)     Pothole     Done     6/14/20       3     Iowa Colony blvd     Pothole     Done     6/14/20       4     Iowa Colony blvd     Pothole     Done     6/14/20       4     Iowa Colony blvd     Pothole     Done     6/14/20	8	Ames @ CR 62	Leaning sign		Done	6/9/2023
Image: Constraint of the second se	9	Davenport pkwy @ Iowa colony pkwy	Leaning Stop sign		Done	6/10/2023
B       DEBRIS REMOVAL       Image: constraint of the second seco						
1       Cr 190 @ lowa Colony blvd       Trash Pick up       Done       6/26/24         20              6.       MOWING/TREE TRIMMING              1       Bullard pkwy @ CR 79       Tree down        Done       6/26/24         2       lowa colony       Grass cut       Done       6/23/20         3       lowa colony       Grass cut       Done       6/24/20         0.       STREET REPAIRS       Done       6/14/24         1       Bullard Pkwy @ 288 (S)       Pothole       Done       6/14/24         2       Davenport pkwy @Hwy 288 (N)       Pothole       Done       6/14/24         2       Davenport pkwy @Hwy 288 (N)       Pothole       Done       6/14/24         3       Gr 190 @ lowa Colony blvd       Pothole       Done       6/14/24         4       lowa Colony blvd       Pothole       Done       6/14/24         5       Gr 190 @ lowa Colony blvd       Pothole       Done       6/14/24         4       lowa Colony blvd       Pothole       Done       6/14/24         4       Iowa Colony blvd       Rive 6       Pothole	B.	DEBRIS REMOVAL				
20     Image: Constraint of the second	1	Cr 190 @ Iowa Colony blvd	Trash Pick up		Done	6/26/2023
C.       MOWING/TREE TRIMMING       Image: constraint of the down       Done       6/4/20         1       Bullard pkwy @ CR 79       Tree down       Done       6/4/20         2       lowa colony       Grass cut       Done       6/23/20         3       lowa colony       Grass cut       Done       6/24/20         b.       STREET REPAIRS       Done       6/24/20         1       Bullard pkwy @ 288 (S)       Pothole       Done       6/14/20         2       Davenport pkwy @Hwy 288 (N)       Pothole       Done       6/14/20         3       cr 190 @ lowa Colony btvd       Pothole       Done       6/14/20         4       lowa Colony btvd       Pothole       Done       6/17/20         4       lowa Colony btvd       Pothole       Done       6/17/20         5       Ditch Drainage issue       Image       Image       Image	20					
1       Bullard pkwy @ CR 79       Tree down       Done       6/4/24         2       lowa colony       Grass cut       Done       6/23/24         3       lowa colony       Grass cut       Done       6/23/24         p.       STREET REPAIRS       Cone       6/14/24         1       Bullard Pkwy @ 288 (S)       Pothole       Done       6/14/24         2       Davenport pkwy @Hwy 288 (N)       Pothole       Done       6/14/24         3       Gr 190 @ lowa Colony blvd       Pothole       Done       6/15/24         4       lowa Colony blvd @ Hwy 6       Pothole       Done       6/15/24         4       lowa Colony blvd @ Hwy 6       Pothole       Done       6/15/24         4       lowa Colony blvd @ Hwy 6       Pothole       Done       6/15/24         4       lowa Colony blvd @ Hwy 6       Pothole       Done       6/15/24         4       lowa Colony blvd @ Hwy 6       Pothole       Done       6/15/24         4       lowa Colony blvd       Pothole       Done       6/17/24         4       lowa Colony blvd       Pothole       Done       6/17/24         5       Parks       Lowa Colony blvd       Pothole       Done<	C.	MOWING/TREE TRIMMING				
2       lowa colony       Grass cut       Done       6/23/24         3       lowa colony       Grass cut       Done       6/23/24         p.       STREPAIRS       Pohole       Done       6/24/26         1       Bullard Pkwy @ 288 (S)       Pohole       Done       6/14/26         2       Deverport pkwy @Hwy 288 (N)       Pothole       Done       6/14/26         3       Cr 190 @ lowa Colony blvd       Pothole       Done       6/16/26         4       lowa Colony blvd       Pothole       Done       6/16/26         4       lowa Colony blvd @ Hwy 6       Pothole       Done       6/17/26         4       lowa Colony blvd @ Hwy 6       Pothole       Done       6/17/26         5       Ditch Drainage issue       Image: Signal       Image: Signal       Image: Signal       Image: Signal         Parks       Cut Grass       Image: Signal       Image: Signal       Image: Signal       Image: Signal       Image: Signal       Image: Signal         Parks       Pull weeds       Pone       6/20/20       6/20/20       6/20/20       6/20/20         Parks       Pull weeds       Pone       6/20/20       Pone       6/20/20       6/20/20       6/20/20       <	1	Bullard pkwy @ CR 79	Tree down		Done	6/4/2023
3       lowa colony       Grass cut       Done       6/24/24         D.       STREET REPAIRS       Image: constraint of the second secon	2	Iowa colony	Grass cut		Done	6/23/2023
D.     STREET REPAIRS       1     Bullard Pkwy @ 288 (S)     Pothole       2     Davenport pkwy @Pkwy 288 (N)     Pothole       3     cr 190 @ lowa Colony blvd     Pothole       4     lowa Colony blvd     Pothole       5     Done     6/14/20       4     lowa Colony blvd     Pothole       6     Pothole     Done       6     Pothole     Done       6     Pothole     Done       6     Pothole     Done       0     Pothole     Pothole       0 <td>3</td> <td>Iowa colony</td> <td>Grass cut</td> <td></td> <td>Done</td> <td>6/24/2023</td>	3	Iowa colony	Grass cut		Done	6/24/2023
1     Bullard Pkwy @ 288 (S)     Pothole     Done     6/14/20       2     Davenport pkwy @Hwy 288 (N)     Pothole     Done     6/14/20       3     Cr 190 @ towa Colony bkd     Pothole     Done     6/14/20       4     Iowa Colony bkd     Pothole     Done     6/14/20       4     Iowa Colony bkd     Pothole     Done     6/14/20       5     Origo Elowa Colony bkd     Pothole     Done     6/14/20       4     Iowa Colony bkd     Pothole     Done     6/14/20       5     Origo Elowa Colony bkd     Pothole     Done     6/14/20       6     Done     Origo Elowa Colony bkd     Pothole     Done     6/14/20       6     Done     Origo Elowa Colony bkd     Pothole     Done     6/14/20       6     Done     Origo Elowa Colony bkd     Pothole     Done     6/14/20       6     Done     Origo Elowa Colony Bkd     Done     0     0       6     Done     Origo Elowa Colony Bkd     Done     6/14/20       7     Done     Origo Elowa Colony Bkd     Done     6/20/20       8     Parks     Cut Grass     Done     6/20/20       9     Parks     Pull weeds     Done     6/21/24	D.	STREET REPAIRS				
2 Davenport pkwy @Hwy 288 (N)     Pothole     Done     6/15/24       3 Cr 190 @ lowa Colony bbd     Pothole     Done     6/16/26       4 lowa Colony bbd @ Hwy 6     Pothole     Done     6/17/26       Marks     Ditch Drainage issue     Image: Second Colony bbd     Image: Second Colony bbd     Image: Second Colony bbd       Parks     Cut Grass     Done     6/17/26       Parks     Pull weeds     Done     6/17/26	1	Bullard Pkwy @ 288 (S)	Pothole		Done	6/14/2023
3 Gr 190 @ towa Colony blvd     Pothole     Done     6/16/20       4 Iowa Colony blvd @ Hwy 6     Pothole     Done     6/17/20       0     Image: Colony blvd @ Hwy 6     Pothole     Image: Colony blvd @ Hwy 6     6/17/20       1     Image: Colony blvd @ Hwy 6     Pothole     Image: Colony blvd @ Hwy 6     6/17/20       1     Image: Colony blvd @ Hwy 6     Image: Colony blvd @ Hwy 6     Image: Colony blvd @ Hwy 6     6/17/20       1     Image: Colony blvd @ Hwy 6     6/17/20       1     Image: Colony blvd @ Hwy 6     Image: Colony blv	2	Davenport pkwy @Hwy 288 (N)	Pothole		Done	6/15/2023
4 lowa Colony blvd @ Hwy 6     Pothole     Done     6/17/20       Image: Instance of the second s	3	Cr 190 @ Iowa Colony blvd	Pothole		Done	6/16/2023
Image: solution of the soluti	4	Iowa Colony blvd @ Hwy 6	Pothole		Done	6/17/2023
Parks     Cut Grass       Parks     Cut Grass       Parks     Pull weeds						
Ditch Drainage issue     Image: Solution of the solu						
Parks     Cut Grass     Done     6/20/200       Parks     Pull weeds     Done     6/20/200		Ditch Drainage issue				
ParksCut GrassDone6/20/20ParksCut GrassDone6/20/20ParksPull weedsDone6/20/20						
Parks         Cut Grass         Done         6/20/20           Parks         Pull weeds         Done         6/21/20		Parks				
Parks         Pull weeds         Done         6/21/20		Parks	Cut Grass		Done	6/20/2023
		Parks	Pull weeds		Done	6/21/2023
Parks Pick up trash Done 6/21/20		Parks	Pick up trash		Done	6/21/2023
Miscellaneous Works		Miscellaneous Works				
1 Fourth Fest Planning Planning 6/22 thu 6/30 Done 6/22/20	1	Fourth Fest	Planning	Planning 6/22 thu 6/30	Done	6/22/2023



## MEMORANDIUM

Date:July 11, 2023To:Wil Kennedy<br/>City Council MembersFrom:Dinh V. Ho, P.E.RE:COIC Council Meeting – June 2023 Engineer's Reportcc:Robert Hemminger, Kayleen Rosser

The following is a status report of various engineering items:

- 1. TxDOT Overpasses:
  - Staff has a standing monthly construction meeting with TxDOT for updates.
  - Traffic Updates:
    - i. Transitioning the access road at Iowa Colony Blvd. and SH 288 southbound.
- 2. ROADWAY IMPROVEMENTS
  - Brazoria County has completed the majority of the asphalt overlay roadway in Precinct 2 areas through BC Interlocal Agreement.
- 3. GRANTS UPDATE
  - TWBD- FIF GRANT Master Drainage Plan
    - i. A FINAL Report submitted to TWDB on 5/30/23. We are expecting approval by 6/30/23 and adoption in July.
  - AMES ROAD BRIDGE
    - i. Construction is complete. Grantworks is in the process of closing out this project.
- 4. Capital Improvement Projects

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- 2021 Waterline Extension
  - i. Construction Documents plans are complete.
  - ii. City Attorney is reviewing the Contract Documents prior to advertising.
- 5. CONSTRUCTION PROJECT STATUS:
  - A. MERIDIANA SUBDIVISION RISE COMMUNITIES
    - MER Sec 55A 15% utilities
    - MER Sec 58B 15% Utilities
    - Detention Pond O & P Hardscape 25%
    - C-Store Break Time Meridiana Pkwy & Karsten Blvd Mobilized
      - Active construction projects
        - BCMUD 55 Water Plant Exp No. 1 85% complete.
  - B. STERLING LAKES LAND TEJAS
    - Active construction projects.
      - BCMUD 31 WWTP Expansion Ph IV 99% complete. Awaiting punch list items to be addressed. Awaiting final closeout documents.
      - BC MUD 31 Water Well 1 and 2 Rework

#### C. SIERRA VISTA - LAND TEJAS

- Active construction projects
  - Meridiana Parkway Traffic Signal
    - Control box for Karsten Blvd and Meridiana Pkwy intersection to be relocated.
    - Final walkthrough.. awaiting punch list

#### D. SIERRA VISTA WEST - LAND TEJAS

- Active construction projects:
  - Sierra Vista West Mass Grading and Detention Phase II Awaiting final walk.
  - BCMUD 53 Lift Station No. 2 95% complete. Awaiting permanent power.
  - Sierra Vista West Ph II B Excavation and Grading 95% complete.
  - Davenport Pkwy Ph 1 100% Complete, awaiting punch list items
  - BCMUD 53 Water Plant Expansion 55% complete.
  - Ames Blvd. Phase 2 Utilities 90% complete. Paving 50% complete.
  - SVW Civil Site Amenity Center Utilities 75% complete.

#### E. STERLING LAKES NORTH

- Active construction projects:
  - Sterling Lakes North Detention Basin 95% complete.
  - Sterling Lakes North Sec 1 90% of underground complete. Paving 20% Completed
  - Sterling Lakes North Sec 2 40% Utilities
  - Sterling Lakes North Sec 3 40% Utilities
  - Sterling Lakes North Ph 1 C&G Done
  - Sterling Lakes North Lift Station 80% complete.
  - Sterling Lakes North Drive water line only 90% complete.
  - Sterling Lakes North Mass Grading Only 85% complete.

#### F. CALDWELL CROSSING

- Active construction projects
  - BCMUD 87 Clearing and Grubbing 90% complete.
  - BCMUD 87 Detention and Grading 40% complete.
  - BCMUD 87 Water Plant No. 1 15% complete
- G. OTHER CONSTRUCTION PROJECTS
  - AISD H.S. No. 4 Awaiting LS approval, awaiting power.
  - Davenport/Discovery Drive: Waiting for closeout documents
  - Nichols Mock Elementary School Punchlist walk scheduled.
  - Sierra Vista Plaza 90% of utilities complete. Awaiting of final walk.
  - Iowa Colony WSD No. 3 Fire and EMS Awaiting punch list items.
  - Riverstone Montessori 2820 Mer Pkwy 95% complete.
  - AISD JHS 85% utilities complete.
  - Future Explorers Academy 90% of utilities and paving complete.
- 6. OTHER ITEMS:
  - A. N/A

10 - General Fund	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Revenue Summary							
Sales Tax	50,373.49	35,083.33	15,290.16	391,103.70	421,000.00	92.90%	29,896.30
Property Tax	35,167.39	402,141.67	(366,974.28)	4,881,464.06	4,825,700.00	101.16%	(55,764.06)
Miscellaneous	3,457.62	26,258.33	(22,800.71)	426,408.09	315,100.00	135.32%	(111,308.09)
Fines & Forfeitures	44,136.42	22,108.33	22,028.09	235,084.85	265,300.00	88.61%	30,215.15
License & Permits	233,448.83	199,708.31	33,740.52	1,595,138.97	2,396,500.00	66.56%	801,361.03
Business & Franchise	0.00	16,666.66	(16,666.66)	251,826.75	200,000.00	125.91%	(51,826.75)
Grant Income	0.00	0.00	0.00	108,386.59	0.00	0.00%	(108,386.59)
Revenue Totals	366,583.75	701,966.63	(335,382.88)	7,889,413.01	8,423,600.00	93.66%	534,186.99
Expense Summary							
Personnel Services	193,457.31	198,210.05	(4,752.74)	1,600,091.41	2,378,520.00	67.27%	778,428.59
Professional/Contract Services	156,001.26	134,327.77	21,673.49	1,451,706.75	1,610,600.00	90.13%	158,893.25
Materials & Supplies	25,037.67	30,772.23	(5,734.56)	264,242.34	370,600.00	71.30%	106,357.66
Services	2,848.40	209,916.64	(207,068.24)	2,484,871.60	2,519,000.00	98.65%	34,128.40
Capital Outlay	4,588.50	45,833.33	(41,244.83)	3,072,340.77	550,000.00	558.61%	(2,522,340.77)
Expense Totals	381,933.14	619,060.02	(237,126.88)	8,873,252.87	7,428,720.00	119.45%	(1,444,532.87)

10 - General Fund	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Sales Tax							
10-4109 Mixed Beverage Tax	445.86	83.33	362.53	4,195.29	1,000.00	419.53%	(3,195.29)
10-4110 City Sales Tax	49,927.63	35,000.00	14,927.63	386,908.41	420,000.00	92.12%	33,091.59
Sales Tax Totals	50,373.49	35,083.33	15,290.16	391,103.70	421,000.00	92.90%	29,896.30
Property Tax							
10-4120 Property Tax	34,492.79	202,675.00	(168,182.21)	4,865,083.23	2,432,100.00	200.04%	(2,432,983.23
10-4121 Delinquent Property Tax	674.60	1,666.67	(992.07)	12,148.84	20,000.00	60.74%	7,851.16
10-4130 Property Tax - TIF - 70%	0.00	123,508.33	(123,508.33)	4,231.99	1,482,100.00	0.29%	1,477,868.01
10-4135 Property Tax MUD 31 - 70%	0.00	74,291.67	(74,291.67)	0.00	891,500.00	0.00%	891,500.00
Property Tax Totals	35,167.39	402,141.67	(366,974.28)	4,881,464.06	4,825,700.00	101.16%	(55,764.06)
Miscellaneous							
10-4124 Accident Reports	45.00	0.00	45.00	230.00	0.00	0.00%	(230.00)
10-4134 Intermodel Ship Container	0.00	250.00	(250.00)	2,952.45	3,000.00	98.42%	47.55
10-4910 Interest Income	467.68	8.33	459.35	59,413.72	100.00	59413.72%	(59,313.72)
10-4911 Other Revenue	2,944.94	26,000.00	(23,055.06)	323,811.92	312,000.00	103.79%	(11,811.92)
10-4912 Donations/Sponsorships	0.00	0.00	0.00	40,000.00	0.00	0.00%	(40,000.00)
Miscellaneous Totals	3,457.62	26,258.33	(22,800.71)	426,408.09	315,100.00	135.32%	(111,308.09)
Fines & Forfeitures							
10-4125 Arrest Fee	0.00	416.67	(416.67)	0.00	5,000.00	0.00%	5,000.00
10-4701 Citations/Warrants	19,022.25	20,833.33	(1,811.08)	163,523.00	250,000.00	65.41%	86,477.00
10-4703 Municipal Jury Funds	30.16	25.00	5.16	179.67	300.00	59.89%	120.33
10-4704 Local Truancy Prevention	1,506.31	500.00	1,006.31	8,983.82	6,000.00	149.73%	(2,983.82)
10-4705 Time Payment Reimbursement	75.00	0.00	75.00	390.00	0.00	0.00%	(390.00)
10-4709 Court Costs	23,502.70	333.33	23,169.37	62,008.36	4,000.00	1550.21%	(58,008.36)

10 - General Fund	Current Month Actual	Current Month Budget	Budget Variance	Actual	Annual Budget	% of Budget	Budget Remaining
Fines & Forfeitures							
Fines & Forfeitures Totals	44,136.42	22,108.33	22,028.09	235,084.85	265,300.00	88.61%	30,215.15
License & Permits							
10-4201 Building Construction Permits	160,643.72	133,333.33	27,310.39	723,113.89	1,600,000.00	45.19%	876,886.11
10-4202 Trade Fees	15,740.11	8,333.33	7,406.78	88,688.54	100,000.00	88.69%	11,311.46
10-4203 Reinspection Fees	875.00	2,500.00	(1,625.00)	7,325.00	30,000.00	24.42%	22,675.00
10-4204 Signs	0.00	125.00	(125.00)	300.00	1,500.00	20.00%	1,200.00
10-4205 Property Improvement Permits	0.00	416.67	(416.67)	1,100.75	5,000.00	22.02%	3,899.25
10-4206 Dirt Work Permits	500.00	83.33	416.67	1,250.00	1,000.00	125.00%	(250.00)
10-4207 Driveway Permits	150.00	125.00	25.00	150.00	1,500.00	10.00%	1,350.00
10-4210 Culvert Permit	0.00	41.67	(41.67)	150.00	500.00	30.00%	350.00
10-4211 Commercial Vehicle Permit	0.00	250.00	(250.00)	1,250.00	3,000.00	41.67%	1,750.00
10-4212 Park Use Permit	100.00	83.33	16.67	800.00	1,000.00	80.00%	200.00
10-4213 Mobile Food Unit Permit	800.00	83.33	716.67	2,600.00	1,000.00	260.00%	(1,600.00)
10-4301 Preliminary Plat Fees	0.00	4,166.67	(4,166.67)	55,120.00	50,000.00	110.24%	(5,120.00)
10-4302 Final Plat Fees	0.00	2,083.33	(2,083.33)	44,805.00	25,000.00	179.22%	(19,805.00)
10-4303 Abbreviated Plat Fees	1,540.00	2,083.33	(543.33)	15,495.00	25,000.00	61.98%	9,505.00
10-4305 Admin Fee - Early Plat Recording	0.00	8,333.33	(8,333.33)	0.00	100,000.00	0.00%	100,000.00
10-4401 Infrastructure Plan Review Fee	19,441.07	8,333.33	11,107.74	172,361.62	100,000.00	172.36%	(72,361.62)
10-4403 Civil Site Plan Review Fee	33,658.93	29,166.67	4,492.26	476,529.17	350,000.00	136.15%	(126,529.17)
10-4501 Rezoning Fees	0.00	83.33	(83.33)	4,100.00	1,000.00	410.00%	(3,100.00)
10-4503 Specific Use Permit	0.00	83.33	(83.33)	0.00	1,000.00	0.00%	1,000.00
License & Permits Totals	233,448.83	199,708.31	33,740.52	1,595,138.97	2,396,500.00	66.56%	801,361.03
Business & Franchise							
10-4601 Franchise Tax - Electric	0.00	14,583.33	(14,583.33)	233,790.74	175,000.00	133.59%	(58,790.74)

10 - General Fund	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Business & Franchise							
10-4603 Telecommunication Fee - Sales	0.00	2,083.33	(2,083.33)	18,036.01	25,000.00	72.14%	6,963.99
Business & Franchise Totals	0.00	16,666.66	(16,666.66)	251,826.75	200,000.00	125.91%	(51,826.75)
Grant Income							
10-4803 State & Federal Grants	0.00	0.00	0.00	108,386.59	0.00	0.00%	(108,386.59)
Grant Income Totals	0.00	0.00	0.00	108,386.59	0.00	0.00%	(108,386.59)
Revenue Totals	366,583.75	701,966.63	(335,382.88)	7,889,413.01	8,423,600.00	93.66%	534,186.99

10 - General Fund Administration	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
Meteriala 9 Constine	2 574 02	C F00 01		42,000,46	70,000,00	FF 100/	
	2,574.02	6,500.01	(3,925.99)	42,980.46	/8,000.00	55.10%	35,019.54
Personnel Services	41,682.50	32,371.68	9,310.82	287,238.28	388,460.00	/3.94%	101,221.72
Professional/Contract Services	8,534.46	20,024.99	(11,490.53)	252,003.00	240,300.00	104.87%	(11,703.00)
Services	2,112.11	3,466.66	(1,354.55)	36,429.47	41,600.00	87.57%	5,170.53
Administration Totals	54,903.09	62,363.34	(7,460.25)	618,651.21	748,360.00	82.67%	129,708.79
10 - General Fund Finance	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
Materials & Supplies	64.23	1,763.89	(1,699.66)	11,558.97	21,500.00	53.76%	9,941.03
Personnel Services	9,060.27	9,352.51	(292.24)	85,877.08	112,230.00	76.52%	26,352.92
Professional/Contract Services	1,594.63	277.78	1,316.85	4,465.31	3,000.00	148.84%	(1,465.31)
Finance Totals	10,719.13	11,394.18	(675.05)	101,901.36	136,730.00	74.53%	34,828.64
10 - General Fund Police	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
Materials & Supplies	4,091.15	5,175.00	(1,083,85)	62 <i>.</i> 516.21	62,100.00	100.67%	(416.21)
Personnel Services	104,549.83	115,001.68	(10,451.85)	867,340.83	1,380,020.00	62.85%	512,679,17
Professional/Contract Services	0.00	83.33	(83.33)	707.51	1,000.00	70.75%	292.49
Services	520.86	6,416.67	(5,895.81)	17,425.08	77,000.00	22.63%	59,574.92
Police Totals	109,161.84	126,676.68	(17,514.84)	947,989.63	1,520,120.00	62.36%	572,130.37
10 - General Fund Animal Control	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
Materials & Supplies	534.91	416.67	118.24	4,570.87	5,000.00	91.42%	<b>429.13</b> 5

5,506.78	5,818.34	(311.56)	49,315.15	69,820.00	70.63%	20,504.85
359.72	358.33	1.39	3,963.14	4,300.00	92.17%	336.86
101.81	749.99	(648.18)	1,480.88	9,000.00	16.45%	7,519.12
6,503.22	7,343.33	(840.11)	59,330.04	88,120.00	67.33%	28,789.96
	5,506.78 359.72 101.81 6,503.22	5,506.785,818.34359.72358.33101.81749.996,503.227,343.33	5,506.785,818.34(311.56)359.72358.331.39101.81749.99(648.18)6,503.227,343.33(840.11)	5,506.785,818.34(311.56)49,315.15359.72358.331.393,963.14101.81749.99(648.18)1,480.886,503.227,343.33(840.11)59,330.04	5,506.785,818.34(311.56)49,315.1569,820.00359.72358.331.393,963.144,300.00101.81749.99(648.18)1,480.889,000.006,503.227,343.33(840.11)59,330.0488,120.00	5,506.785,818.34(311.56)49,315.1569,820.0070.63%359.72358.331.393,963.144,300.0092.17%101.81749.99(648.18)1,480.889,000.0016.45%6,503.227,343.33(840.11)59,330.0488,120.0067.33%

10 - General Fund Emergency Management	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
Materials & Supplies	0.00	250.00	(250.00)	0.00	3,000.00	0.00%	3,000.00
Professional/Contract Services	0.00	666.67	(666.67)	0.00	8,000.00	0.00%	8,000.00
Emergency Management Totals	0.00	916.67	(916.67)	0.00	11,000.00	0.00%	11,000.00
10 - General Fund Municipal Court	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
Materials & Supplies	5,109.88	1,066.67	4,043.21	8,614.87	12,800.00	67.30%	4,185.13
Personnel Services	10,982.03	11,879.18	(897.15)	102,424.73	142,550.00	71.85%	40,125.27
Professional/Contract Services	5,945.22	7,333.33	(1,388.11)	61,678.41	88,000.00	70.09%	26,321.59
Municipal Court Totals	22,037.13	20,279.18	1,757.95	172,718.01	243,350.00	70.98%	70,631.99
10 - General Fund Public Works	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
Materials & Supplies	6,192.04	6,124.98	67.06	66,895.19	73,500.00	91.01%	6,604.81
Personnel Services	6,750.60	7,815.82	(1,065.22)	67,242.24	93,790.00	71.69%	26,547.76
Professional/Contract Services	9,300.00	16,833.34	(7,533.34)	76,517.81	202,000.00	37.88%	125,482.19
Services	41.81	716.66	(674.85)	852.63	8,600.00	9.91%	7,747.37
Public Works Totals	22,284.45	31,490.80	(9,206.35)	211,507.87	377,890.00	55.97%	166,382.13

10 - General Fund Parks & Recreation	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
Materials & Supplies	3,646.30	7,000.00	(3,353.70)	44,620.64	85,000.00	52.49%	40,379.36
Professional/Contract Services	22,515.92	6,500.00	16,015.92	63,658.68	77,000.00	82.67%	13,341.32
Parks & Recreation Totals	26,162.22	13,500.00	12,662.22	108,279.32	162,000.00	66.84%	53,720.68
10 - General Fund Community Development	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
Materials & Supplies	307.51	1,416.67	(1,109.16)	14,650.14	17,000.00	86.18%	2,349.86
Personnel Services	4,917.66	5,478.34	(560.68)	46,729.66	65,740.00	71.08%	19,010.34
Professional/Contract Services	83,293.81	56,666.67	26,627.14	821,096.02	680,000.00	120.75%	(141,096.02)
Services	0.00	197,816.67	(197,816.67)	2,427,685.66	2,373,800.00	102.27%	(53,885.66)
Community Development Totals	88,518.98	261,378.35	(172,859.37)	3,310,161.48	3,136,540.00	105.54%	(173,621.48)
10 - General Fund Fire Marshal/Building Official	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
Materials & Supplies	2,517.63	1,058.34	1,459.29	7,834.99	12,700.00	61.69%	4,865.01
Personnel Services	10,007.64	10,492.50	(484.86)	93,923.44	125,910.00	74.60%	31,986.56
Professional/Contract Services	24,457.50	25,583.33	(1,125.83)	167,616.87	307,000.00	54.60%	139,383.13
Services	71.81	749.99	(678.18)	997.88	9,000.00	11.09%	8,002.12
Fire Marshal/Building Official Totals	37,054.58	37,884.16	(829.58)	270,373.18	454,610.00	59.47%	184,236.82
10 - General Fund Capital and Planning Projects	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
Capital Outlay	4,588.50	45,833.33	(41,244.83)	3,072,340.77	550,000.00	558.61%	(2,522,340.77 )

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City of Iowa Colony Financial Statement As of June 30, 2023						7/13/2023 1:27: Item 9.
Capital and Planning Projects Totals	4,588.50	45,833.33	(41,244.83)	3,072,340.77	550,000.00	558.61% (2,522,340.77
Expense Total	381,933.14	619,060.02	(237,126.88)	8,873,252.87	7,428,720.00	119.45% (1,444,532.87

	· · · · · · · · · · · · · · · · · · ·	Variance	Actual	Buaget	Usea	Remaining
31,314.30	21,521.67	9,792.63	219,302.99	258,260.00	84.92%	38,957.01
0.00	2,916.67	(2,916.67)	0.00	35,000.00	0.00%	35,000.00
0.00	833.33	(833.33)	0.00	10,000.00	0.00%	10,000.00
2,417.90	1,646.67	771.23	15,507.87	19,760.00	78.48%	4,252.13
3,593.50	2,367.50	1,226.00	24,305.05	28,410.00	85.55%	4,104.95
2,490.26	1,466.67	1,023.59	14,331.60	17,600.00	81.43%	3,268.40
509.00	86.67	422.33	509.00	1,040.00	48.94%	531.00
0.00	15.00	(15.00)	26.99	180.00	14.99%	153.01
553.84	600.00	(46.16)	5,261.48	7,200.00	73.08%	1,938.52
800.00	875.00	(75.00)	7,600.00	10,500.00	72.38%	2,900.00
3.70	12.50	(8.80)	33.30	150.00	22.20%	116.70
0.00	30.00	(30.00)	360.00	360.00	100.00%	0.00
827.50	8,333.33	(7,505.83)	100,219.84	100,000.00	100.22%	(219.84)
0.00	2,500.00	(2,500.00)	44,351.00	30,000.00	147.84%	(14,351.00)
0.00	2,083.33	(2,083.33)	37,523.45	25,000.00	150.09%	(12,523.45)
2,017.64	666.67	1,350.97	4,517.64	8,000.00	56.47%	3,482.36
0.00	8.33	(8.33)	5.00	100.00	5.00%	95.00
0.00	208.33	(208.33)	0.00	2,500.00	0.00%	2,500.00
225.51	641.67	(416.16)	4,048.82	7,700.00	52.58%	3,651.18
0.00	2,083.33	(2,083.33)	22,592.98	25,000.00	90.37%	2,407.02
5 750.00	916.67	(166.67)	5,850.00	11,000.00	53.18%	5,150.00
0.00	583.33	(583.33)	2,756.25	7,000.00	39.38%	4,243.75
2,582.67	1,000.00	1,582.67	21,668.88	12,000.00	180.57%	(9,668.88)
150.00	291.67	(141.67)	2,166.29	3,500.00	61.89%	1,333.71
1,981.14	333.33	1,647.81	6,302.85	4,000.00	157.57%	(2,302.85)
0.00	333.33	(333.33)	0.00	4,000.00	0.00%	4,000.00
	31,314.30 0.00 2,417.90 3,593.50 2,490.26 509.00 0.00 553.84 800.00 3.70 0.00 827.50 0.00 2,017.64 0.00 2,017.64 0.00 2,017.64 0.00 3.70 0.00 2,017.64 0.00 3.75 0.00 0.00 2,551 0.00 0.00 1,981.14 0.00	31,314.30         21,521.67           0.00         2,916.67           0.00         833.33           2,417.90         1,646.67           3,593.50         2,367.50           2,490.26         1,466.67           509.00         86.67           0.00         15.00           553.84         600.00           800.00         875.00           3.70         12.50           0.00         30.00           827.50         8,333.33           0.00         2,083.33           2,017.64         666.67           0.00         2,083.33           225.51         641.67           0.00         2,083.33           225.51         641.67           0.00         2,083.33           2,500.00         916.67           0.00         583.33           2,582.67         1,000.00           150.00         291.67           1,981.14         333.33           0.00         333.33	31,314.30         21,521.67         9,792.63           0.00         2,916.67         (2,916.67)           0.00         833.33         (833.33)           2,417.90         1,646.67         771.23           3,593.50         2,367.50         1,226.00           2,490.26         1,466.67         1,023.59           509.00         86.67         422.33           0.00         15.00         (15.00)           553.84         600.00         (46.16)           800.00         875.00         (75.00)           3.70         12.50         (8.80)           0.00         30.00         (30.00)           827.50         8,333.33         (7,505.83)           0.00         2,083.33         (2,083.33)           2,017.64         666.67         1,350.97           0.00         8.33         (208.33)           2,017.64         666.67         1,350.97           0.00         2,083.33         (2,083.33)           2,25.51         641.67         (416.16)           0.00         2,083.33         (2,083.33)           2,582.67         1,000.00         1,582.67           150.00         291.67         (141.67)<	31,314.30         21,521.67         9,792.63         219,302.99           0.00         2,916.67         (2,916.67)         0.00           0.00         833.33         (833.33)         0.00           2,417.90         1,646.67         771.23         15,507.87           3,593.50         2,367.50         1,226.00         24,305.05           2,490.26         1,466.67         1,023.59         14,331.60           509.00         86.67         422.33         509.00           0.00         15.00         (15.00)         26.99           553.84         600.00         (46.16)         5,261.48           800.00         875.00         (75.00)         7,600.00           3.70         12.50         (8.80)         33.30           0.00         30.00         (30.00)         360.00           827.50         8,333.33         (7,505.83)         100,219.84           0.00         2,083.33         (2,083.33)         37,523.45           2,017.64         666.67         1,350.97         4,517.64           0.00         2,083.33         (2,083.33)         5.00           0.00         2,083.33         (208.33)         0.00           225.51 <td>31,314.30         21,521.67         9,792.63         219,302.99         258,260.00           0.00         2,916.67         (2,916.67)         0.00         35,000.00           0.00         833.33         (833.33)         0.00         10,000.00           2,417.90         1,646.67         771.23         15,507.87         19,760.00           3,593.50         2,367.50         1,226.00         24,305.05         28,410.00           2,490.26         1,466.67         1,023.59         14,331.60         17,600.00           509.00         86.67         422.33         509.00         1,040.00           0.00         15.00         (15.00)         26.99         180.00           553.84         600.00         (46.16)         5,261.48         7,200.00           800.00         875.00         (75.00)         7,600.00         10,500.00           0.00         30.00         (30.00)         360.00         360.00           827.50         8,333.33         (7,505.83)         100,219.84         100,000.00           0.00         2,083.33         (2,083.33)         37,523.45         25,000.00           2,017.64         666.67         1,350.97         4,517.64         8,000.00</td> <td>31,314.30         21,521.67         9,792.63         219,302.99         258,260.00         84.92%           0.00         2,916.67         (2,916.67)         0.00         35,000.00         0.00%           0.00         833.33         (833.33)         0.00         10,000.00         0.00%           2,417.90         1,646.67         771.23         15,507.87         19,760.00         78.48%           3,593.50         2,367.50         1,226.00         24,305.05         28,410.00         85.55%           2,490.26         1,466.67         1,023.59         14,331.60         17,600.00         81.43%           509.00         86.67         422.33         509.00         1,040.00         48.94%           0.00         15.00         (15.00)         26.99         180.00         14.99%           553.84         600.00         (46.16)         5,261.48         7,200.00         72.38%           3.70         12.50         (8.80)         33.30         150.00         22.20%           0.00         30.00         (30.00)         360.00         360.00         100.22%           0.00         2,500.00         (2,500.00)         44,351.00         30,000.0         147.84%           0.00&lt;</td>	31,314.30         21,521.67         9,792.63         219,302.99         258,260.00           0.00         2,916.67         (2,916.67)         0.00         35,000.00           0.00         833.33         (833.33)         0.00         10,000.00           2,417.90         1,646.67         771.23         15,507.87         19,760.00           3,593.50         2,367.50         1,226.00         24,305.05         28,410.00           2,490.26         1,466.67         1,023.59         14,331.60         17,600.00           509.00         86.67         422.33         509.00         1,040.00           0.00         15.00         (15.00)         26.99         180.00           553.84         600.00         (46.16)         5,261.48         7,200.00           800.00         875.00         (75.00)         7,600.00         10,500.00           0.00         30.00         (30.00)         360.00         360.00           827.50         8,333.33         (7,505.83)         100,219.84         100,000.00           0.00         2,083.33         (2,083.33)         37,523.45         25,000.00           2,017.64         666.67         1,350.97         4,517.64         8,000.00	31,314.30         21,521.67         9,792.63         219,302.99         258,260.00         84.92%           0.00         2,916.67         (2,916.67)         0.00         35,000.00         0.00%           0.00         833.33         (833.33)         0.00         10,000.00         0.00%           2,417.90         1,646.67         771.23         15,507.87         19,760.00         78.48%           3,593.50         2,367.50         1,226.00         24,305.05         28,410.00         85.55%           2,490.26         1,466.67         1,023.59         14,331.60         17,600.00         81.43%           509.00         86.67         422.33         509.00         1,040.00         48.94%           0.00         15.00         (15.00)         26.99         180.00         14.99%           553.84         600.00         (46.16)         5,261.48         7,200.00         72.38%           3.70         12.50         (8.80)         33.30         150.00         22.20%           0.00         30.00         (30.00)         360.00         360.00         100.22%           0.00         2,500.00         (2,500.00)         44,351.00         30,000.0         147.84%           0.00<

10 - General Fund Administration	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
10-10-5228 Tax Appraisal & Collection	0.00	41.67	(41.67)	0.00	500.00	0.00%	500.00
10-10-5301 Office Supplies	313.04	1,166.67	(853.63)	3,010.11	14,000.00	21.50%	10,989.89
10-10-5302 Janitorial Supplies	316.00	333.33	(17.33)	1,245.37	4,000.00	31.13%	2,754.63
10-10-5309 Uniforms	0.00	166.67	(166.67)	0.00	2,000.00	0.00%	2,000.00
10-10-5310 Postage	61.73	83.33	(21.60)	295.72	1,000.00	29.57%	704.28
10-10-5311 Building Repairs &	365.70	1,666.67	(1,300.97)	8,742.68	20,000.00	43.71%	11,257.32
10-10-5312 Recognition,	159.06	166.67	(7.61)	2,684.28	2,000.00	134.21%	(684.28)
10-10-5314 Computer & Technology	0.00	833.33	(833.33)	7,057.34	10,000.00	70.57%	2,942.66
10-10-5315 Computer Software/License	934.47	1,250.00	(315.53)	16,901.34	15,000.00	112.68%	(1,901.34)
10-10-5317 Equipment & Other Rentals	424.02	541.67	(117.65)	2,718.34	6,500.00	41.82%	3,781.66
10-10-5329 Mayor's Special Expense	0.00	125.00	(125.00)	0.00	1,500.00	0.00%	1,500.00
10-10-5330 Miscellaneous	0.00	166.67	(166.67)	325.28	2,000.00	16.26%	1,674.72
10-10-5401 Utilities - Electricity	954.64	583.33	371.31	8,357.46	7,000.00	119.39%	(1,357.46)
10-10-5403 Utilities - Telephone	1,073.85	1,333.33	(259.48)	9,636.42	16,000.00	60.23%	6,363.58
10-10-5404 Mobile Technology Expense	83.62	50.00	33.62	460.00	600.00	76.67%	140.00
10-10-5405 Insurance - Liability & Prop	0.00	666.67	(666.67)	5,485.59	8,000.00	68.57%	2,514.41
10-10-5406 Insurance - Windstorm	0.00	833.33	(833.33)	12,439.00	10,000.00	124.39%	(2,439.00)
10-10-5407 Insurance - Vehicles	0.00	0.00	0.00	51.00	0.00	0.00%	(51.00)
Administration Totals	54,903.09	62,363.34	(7,460.25)	618,651.21	748,360.00	82.67%	129,708.79

10 - General Fund Finance	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
10-15-5101 Salaries - Full Time	6,532.80	7,219.17	(686.37)	62,061.60	86,630.00	71.64%	24,568.40
10-15-5106 Social Security/Medicare	488.54	552.50	(63.96)	4,524.02	6,630.00	68.24%	2,105.98
10-15-5107 TMRS	738.92	794.17	(55.25)	6,567.50	9,530.00	68.91%	2,962.50
10-15-5108 Health & Life Insurance	1,111.69	733.33	378.36	11,192.94	8,800.00	127.19%	(2,392.94)
10-15-5109 Worker's Comp	0.00	29.17	(29.17)	261.00	350.00	74.57%	89.00
10-15-5110 Texas Workforce Commission	0.00	7.50	(7.50)	9.00	90.00	10.00%	81.00
10-15-5114 Benefits Admin Fees	3.70	6.67	(2.97)	33.30	80.00	41.63%	46.70
10-15-5115 Longevity Pay	0.00	10.00	(10.00)	120.00	120.00	100.00%	0.00
10-15-5117 Certificate/Education Pay	184.62	0.00	184.62	1,107.72	0.00	0.00%	(1,107.72)
10-15-5223 Training & Travel	1,574.63	236.11	1,338.52	4,365.31	2,500.00	174.61%	(1,865.31)
10-15-5224 Dues & Subscriptions	20.00	41.67	(21.67)	100.00	500.00	20.00%	400.00
10-15-5301 Office Supplies	23.98	166.67	(142.69)	883.69	2,000.00	44.18%	1,116.31
10-15-5309 Uniforms	0.00	25.00	(25.00)	0.00	300.00	0.00%	300.00
10-15-5310 Postage	40.25	83.33	(43.08)	353.78	1,000.00	35.38%	646.22
10-15-5314 Computer & Technology	0.00	155.56	(155.56)	259.00	2,200.00	11.77%	1,941.00
10-15-5315 Computer Software/License	0.00	1,333.33	(1,333.33)	10,062.50	16,000.00	62.89%	5,937.50
Finance Totals	10,719.13	11,394.18	(675.05)	101,901.36	136,730.00	74.53%	34,828.64

10 - General Fund Police	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
10-20-5101 Salaries - Full Time	70,244.66	80,724.17	(10,479.51)	606,057.34	968,690.00	62.56%	362,632.66
10-20-5104 Salaries - Overtime	1,557.14	2,514.17	(957.03)	21,746.93	30,170.00	72.08%	8,423.07
10-20-5106 Social Security/Medicare	5,439.04	6,175.83	(736.79)	48,028.93	74,110.00	64.81%	26,081.07
10-20-5107 TMRS	8,119.02	8,880.00	(760.98)	67,279.62	106,560.00	63.14%	39,280.38
10-20-5108 Health & Life Insurance	10,212.05	10,266.67	(54.62)	80,818.92	123,200.00	65.60%	42,381.08
10-20-5109 Worker's Comp	6,948.00	4,216.67	2,731.33	24,355.00	50,600.00	48.13%	26,245.00
10-20-5110 Texas Workforce Commission	3.70	105.00	(101.30)	129.62	1,260.00	10.29%	1,130.38
10-20-5114 Benefits Admin Fees	18.50	84.17	(65.67)	181.30	1,010.00	17.95%	828.70
10-20-5115 Longevity Pay	0.00	85.00	(85.00)	1,020.00	1,020.00	100.00%	0.00
10-20-5117 Certificate Pay	2,007.72	1,950.00	57.72	17,723.17	23,400.00	75.74%	5,676.83
10-20-5223 Training & Travel	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
10-20-5231 Recruiting & Hiring Expense	0.00	83.33	(83.33)	707.51	1,000.00	70.75%	292.49
10-20-5301 Office Supplies	199.86	250.00	(50.14)	867.05	3,000.00	28.90%	2,132.95
10-20-5309 Uniforms	232.56	666.67	(434.11)	6,714.62	8,000.00	83.93%	1,285.38
10-20-5310 Postage	174.00	8.33	165.67	321.51	100.00	321.51%	(221.51)
10-20-5311 Building Repairs &	0.00	41.67	(41.67)	0.00	500.00	0.00%	500.00
10-20-5313 Fuel Expense	3,298.78	3,333.33	(34.55)	28,704.62	40,000.00	71.76%	11,295.38
10-20-5319 Vehicle Repairs & Maintenance	185.95	833.33	(647.38)	25,458.54	10,000.00	254.59%	(15,458.54)
10-20-5330 Miscellaneous	0.00	41.67	(41.67)	449.87	500.00	89.97%	50.13
10-20-5404 Mobile Technology Expense	520.86	500.00	20.86	4,331.58	6,000.00	72.19%	1,668.42
10-20-5405 Insurance - Liability & Prop	0.00	666.67	(666.67)	5,737.50	8,000.00	71.72%	2,262.50
10-20-5407 Insurance - Vehicles	0.00	583.33	(583.33)	7,356.00	7,000.00	105.09%	(356.00)
10-20-5410 Vehicle Replacement Fund	0.00	4,666.67	(4,666.67)	0.00	56,000.00	0.00%	56,000.00
Police Totals	109,161.84	126,676.68	(17,514.84)	947,989.63	1,520,120.00	62.36%	572,130.37

10 - General Fund Animal Control	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
10-21-5101 Salaries - Full Time	3,849.25	3,934.17	(84.92)	34,109.25	47,210.00	72.25%	13,100.75
10-21-5104 Salaries - Overtime	133.50	145.00	(11.50)	1,017.94	1,740.00	58.50%	722.06
10-21-5106 Social Security/Medicare	297.69	301.67	(3.98)	2,633.57	3,620.00	72.75%	986.43
10-21-5107 TMRS	438.11	433.33	4.78	3,655.53	5,200.00	70.30%	1,544.47
10-21-5108 Health & Life Insurance	727.53	733.33	(5.80)	6,376.06	8,800.00	72.46%	2,423.94
10-21-5109 Worker's Comp	57.00	246.67	(189.67)	1,360.50	2,960.00	45.96%	1,599.50
10-21-5110 Texas Workforce Commission	0.00	7.50	(7.50)	9.00	90.00	10.00%	81.00
10-21-5114 Benefits Admin Fees	3.70	6.67	(2.97)	33.30	80.00	41.63%	46.70
10-21-5115 Longevity Pay	0.00	10.00	(10.00)	120.00	120.00	100.00%	0.00
10-21-5223 Training & Travel	0.00	208.33	(208.33)	2,495.24	2,500.00	99.81%	4.76
10-21-5224 Dues & Subscriptions	0.00	25.00	(25.00)	300.00	300.00	100.00%	0.00
10-21-5229 Contractual Services	359.72	125.00	234.72	1,167.90	1,500.00	77.86%	332.10
10-21-5301 Office Supplies	0.00	25.00	(25.00)	175.57	300.00	58.52%	124.43
10-21-5309 Uniforms	27.06	41.67	(14.61)	434.01	500.00	86.80%	65.99
10-21-5310 Postage	1.80	16.67	(14.87)	45.38	200.00	22.69%	154.62
10-21-5313 Fuel Expense	317.85	208.33	109.52	2,555.44	2,500.00	102.22%	(55.44)
10-21-5319 Vehicle Repairs & Maintenance	15.00	83.33	(68.33)	857.76	1,000.00	85.78%	142.24
10-21-5328 Small Tools & Minor	173.20	41.67	131.53	502.71	500.00	100.54%	(2.71)
10-21-5404 Mobile Technology Expense	101.81	83.33	18.48	1,003.13	1,000.00	100.31%	(3.13)
10-21-5407 Insurance - Vehicles	0.00	83.33	(83.33)	477.75	1,000.00	47.78%	522.25
10-21-5410 Vehicle Replacement Fund	0.00	583.33	(583.33)	0.00	7,000.00	0.00%	7,000.00
Animal Control Totals	6,503.22	7,343.33	(840.11)	59,330.04	88,120.00	67.33%	28,789.96

10 - General Fund Emergency Management	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
10-22-5214 Advertising/Printing Expense	0.00	166.67	(166.67)	0.00	2,000.00	0.00%	2,000.00
10-22-5223 Training & Travel	0.00	83.33	(83.33)	0.00	1,000.00	0.00%	1,000.00
10-22-5229 Contractual Services	0.00	416.67	(416.67)	0.00	5,000.00	0.00%	5,000.00
10-22-5301 Office Supplies	0.00	166.67	(166.67)	0.00	2,000.00	0.00%	2,000.00
10-22-5315 Computer Software/License	0.00	83.33	(83.33)	0.00	1,000.00	0.00%	1,000.00
Emergency Management Totals	0.00	916.67	(916.67)	0.00	11,000.00	0.00%	11,000.00

10 - General Fund Municipal Court	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
10-25-5101 Salaries - Full Time	7,796.80	8,444.17	(647.37)	73,770.40	101,330.00	72.80%	27,559.60
10-25-5104 Salaries - Overtime	123.05	115.83	7.22	623.41	1,390.00	44.85%	766.59
10-25-5106 Social Security/Medicare	606.13	646.67	(40.54)	5,702.63	7,760.00	73.49%	2,057.37
10-25-5107 TMRS	890.47	929.17	(38.70)	7,892.29	11,150.00	70.78%	3,257.71
10-25-5108 Health & Life Insurance	1,382.80	1,466.67	(83.87)	12,343.98	17,600.00	70.14%	5,256.02
10-25-5109 Worker's Comp	0.00	34.17	(34.17)	309.00	410.00	75.37%	101.00
10-25-5110 Texas Workforce Commission	0.00	15.00	(15.00)	17.99	180.00	9.99%	162.01
10-25-5114 Benefits Admin Fees	7.40	12.50	(5.10)	66.60	150.00	44.40%	83.40
10-25-5115 Longevity Pay	0.00	15.00	(15.00)	180.00	180.00	100.00%	0.00
10-25-5117 Certificate Pay	175.38	200.00	(24.62)	1,518.43	2,400.00	63.27%	881.57
10-25-5203 Attorney/Prosecutor Fees	3,787.50	5,000.00	(1,212.50)	39,875.00	60,000.00	66.46%	20,125.00
10-25-5209 Judge Fees	2,062.50	2,083.33	(20.83)	20,770.34	25,000.00	83.08%	4,229.66
10-25-5220 Interpreter Services	95.22	125.00	(29.78)	548.07	1,500.00	36.54%	951.93
10-25-5223 Training & Travel	0.00	125.00	(125.00)	485.00	1,500.00	32.33%	1,015.00
10-25-5301 Office Supplies	120.28	291.67	(171.39)	1,892.43	3,500.00	54.07%	1,607.57
10-25-5308 Jury Trial Expense	0.00	145.83	(145.83)	1,144.00	1,750.00	65.37%	606.00
10-25-5309 Uniforms	192.00	66.67	125.33	274.47	800.00	34.31%	525.53
10-25-5310 Postage	72.60	62.50	10.10	578.97	750.00	77.20%	171.03
10-25-5315 Computer Software/License	4,725.00	500.00	4,225.00	4,725.00	6,000.00	78.75%	1,275.00
Municipal Court Totals	22,037.13	20,279.18	1,757.95	172,718.01	243,350.00	70.98%	70,631.99

10 - General Fund Public Works	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
10-30-5101 Salaries - Full Time	4,927.00	5,360.83	(433.83)	46,586.68	64,330.00	72.42%	17,743.32
10-30-5104 Salaries - Overtime	136.44	295.83	(159.39)	3,388.26	3,550.00	95.44%	161.74
10-30-5106 Social Security/Medicare	382.06	410.83	(28.77)	3,784.59	4,930.00	76.77%	1,145.41
10-30-5107 TMRS	556.97	590.00	(33.03)	5,190.29	7,080.00	73.31%	1,889.71
10-30-5108 Health & Life Insurance	661.13	733.33	(72.20)	5,950.18	8,800.00	67.62%	2,849.82
10-30-5109 Worker's Comp	87.00	400.83	(313.83)	2,213.25	4,810.00	46.01%	2,596.75
10-30-5110 Texas Workforce Commission	0.00	7.50	(7.50)	8.99	90.00	9.99%	81.01
10-30-5114 Benefits Admin Fees	0.00	6.67	(6.67)	0.00	80.00	0.00%	80.00
10-30-5115 Longevity Pay	0.00	10.00	(10.00)	120.00	120.00	100.00%	0.00
10-30-5219 Roads, Bridges & Drainage	0.00	10,416.67	(10,416.67)	10,360.00	125,000.00	8.29%	114,640.00
10-30-5223 Training & Travel	0.00	166.67	(166.67)	1,657.81	2,000.00	82.89%	342.19
10-30-5229 Contractual Services	9,300.00	6,250.00	3,050.00	64,500.00	75,000.00	86.00%	10,500.00
10-30-5301 Office Supplies	2,371.09	333.33	2,037.76	3,062.71	4,000.00	76.57%	937.29
10-30-5309 Uniforms	0.00	83.33	(83.33)	0.00	1,000.00	0.00%	1,000.00
10-30-5313 Fuel Expense	271.90	333.33	(61.43)	1,974.41	4,000.00	49.36%	2,025.59
10-30-5317 Equipment & Other Rentals	0.00	1,000.00	(1,000.00)	26,144.60	12,000.00	217.87%	(14,144.60)
10-30-5319 Vehicle Repairs & Maintenance	0.00	208.33	(208.33)	295.34	2,500.00	11.81%	2,204.66
10-30-5321 Public Works Maintenance	1,200.00	2,083.33	(883.33)	17,888.50	25,000.00	71.55%	7,111.50
10-30-5322 Special Road Work	0.00	833.33	(833.33)	8,000.00	10,000.00	80.00%	2,000.00
10-30-5328 Small Tools & Minor	0.00	416.67	(416.67)	632.16	5,000.00	12.64%	4,367.84
10-30-5331 Signs & Postings	2,349.05	833.33	1,515.72	8,897.47	10,000.00	88.97%	1,102.53
10-30-5404 Mobile Technology Expense	41.81	50.00	(8.19)	376.38	600.00	62.73%	223.62
10-30-5407 Insurance - Vehicles	0.00	83.33	(83.33)	476.25	1,000.00	47.63%	523.75
10-30-5410 Vehicle Replacement Fund	0.00	583.33	(583.33)	0.00	7,000.00	0.00%	7,000.00
Public Works Totals	22,284.45	31,490.80	(9,206.35)	211,507.87	377,890.00	55.97%	166,382.13

10 - General Fund Parks & Recreation	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
10-32-5229 Contractual Services	22,515.92	6,500.00	16,015.92	63,658.68	77,000.00	82.67%	13,341.32
10-32-5301 Office Supplies	184.48	166.67	17.81	2,291.26	2,000.00	114.56%	(291.26)
10-32-5309 Uniforms	(488.18)	83.33	(571.51)	66.61	1,000.00	6.66%	933.39
10-32-5317 Equipment & Other Rentals	0.00	500.00	(500.00)	0.00	6,000.00	0.00%	6,000.00
10-32-5324 Park Maintenance	3,950.00	6,166.67	(2,216.67)	41,869.77	75,000.00	55.83%	33,130.23
10-32-5331 Signs & Postings	0.00	83.33	(83.33)	393.00	1,000.00	39.30%	607.00
Parks & Recreation Totals	26,162.22	13,500.00	12,662.22	108,279.32	162,000.00	66.84%	53,720.68

10 - General Fund Community Development	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
10-35-5101 Salaries - Full Time	3,560.00	3,836.67	(276.67)	33,633.40	46,040.00	73.05%	12,406.60
10-35-5104 Salaries - Overtime	0.00	141.67	(141.67)	405.96	1,700.00	23.88%	1,294.04
10-35-5106 Social Security/Medicare	267.04	294.17	(27.13)	2,574.63	3,530.00	72.94%	955.37
10-35-5107 TMRS	391.60	422.50	(30.90)	3,553.27	5,070.00	70.08%	1,516.73
10-35-5108 Health & Life Insurance	695.32	733.33	(38.01)	6,136.09	8,800.00	69.73%	2,663.91
10-35-5109 Worker's Comp	0.00	15.83	(15.83)	144.00	190.00	75.79%	46.00
10-35-5110 Texas Workforce Commission	0.00	7.50	(7.50)	9.01	90.00	10.01%	80.99
10-35-5114 Benefits Admin Fees	3.70	6.67	(2.97)	33.30	80.00	41.63%	46.70
10-35-5115 Longevity Pay	0.00	20.00	(20.00)	240.00	240.00	100.00%	0.00
10-35-5206 Professional Services	0.00	4,166.67	(4,166.67)	0.00	50,000.00	0.00%	50,000.00
10-35-5208 Engineering Services	5,028.53	6,250.00	(1,221.47)	166,427.67	75,000.00	221.90%	(91,427.67)
10-35-5232 Early Plat - Admin Fee	0.00	6,666.67	(6,666.67)	0.00	80,000.00	0.00%	80,000.00
10-35-5233 Eng Svc: Permits/Inspections	54,879.04	25,000.00	29,879.04	413,183.76	300,000.00	137.73%	(113,183.76)
10-35-5234 Eng Svc: Plan Review	22,154.24	8,333.33	13,820.91	146,228.59	100,000.00	146.23%	(46,228.59)
10-35-5235 Eng Svc: Platting	1,232.00	6,250.00	(5,018.00)	95,256.00	75,000.00	127.01%	(20,256.00)
10-35-5301 Office Supplies	307.51	125.00	182.51	650.14	1,500.00	43.34%	849.86
10-35-5309 Uniforms	0.00	41.67	(41.67)	0.00	500.00	0.00%	500.00
10-35-5315 Computer Software/License	0.00	1,250.00	(1,250.00)	14,000.00	15,000.00	93.33%	1,000.00
10-35-5411 TIF Fund/MUD 31 Payable	0.00	197,816.67	(197,816.67)	2,427,685.66	2,373,800.00	102.27%	(53,885.66)
Community Development Totals	88,518.98	261,378.35	(172,859.37)	3,310,161.48	3,136,540.00	105.54%	(173,621.48)
10 - General Fund Fire Marshal/Building Official	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
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10-36-5101 Salaries - Full Time	7,307.20	7,876.67	(569.47)	69,149.60	94,520.00	73.16%	25,370.40
10-36-5106 Social Security/Medicare	526.50	603.33	(76.83)	5,006.60	7,240.00	69.15%	2,233.40
10-36-5107 TMRS	803.80	866.67	(62.87)	7,184.24	10,400.00	69.08%	3,215.76
10-36-5108 Health & Life Insurance	1,086.14	733.33	352.81	9,775.26	8,800.00	111.08%	(975.26)
10-36-5109 Worker's Comp	284.00	388.33	(104.33)	2,678.75	4,660.00	57.48%	1,981.25
10-36-5110 Texas Workforce Commission	0.00	7.50	(7.50)	8.99	90.00	9.99%	81.01
10-36-5114 Benefits Admin Fees	0.00	6.67	(6.67)	0.00	80.00	0.00%	80.00
10-36-5115 Longevity Pay	0.00	10.00	(10.00)	120.00	120.00	100.00%	0.00
10-36-5207 Building Inspector	24,457.50	25,000.00	(542.50)	161,725.00	300,000.00	53.91%	138,275.00
10-36-5223 Training & Travel	0.00	333.33	(333.33)	3,870.06	4,000.00	96.75%	129.94
10-36-5224 Dues & Subscriptions	0.00	250.00	(250.00)	2,021.81	3,000.00	67.39%	978.19
10-36-5301 Office Supplies	262.67	125.00	137.67	522.66	1,500.00	34.84%	977.34
10-36-5303 Public Education & Training	130.00	166.67	(36.67)	1,097.50	2,000.00	54.88%	902.50
10-36-5307 Investigation Supplies	0.00	83.33	(83.33)	0.00	1,000.00	0.00%	1,000.00
10-36-5309 Uniforms	0.00	125.00	(125.00)	802.86	1,500.00	53.52%	697.14
10-36-5310 Postage	0.00	16.67	(16.67)	0.00	200.00	0.00%	200.00
10-36-5313 Fuel Expense	426.96	250.00	176.96	2,321.22	3,000.00	77.37%	678.78
10-36-5319 Vehicle Repairs & Maintenance	30.00	125.00	(95.00)	1,422.75	1,500.00	94.85%	77.25
10-36-5328 Small Tools & Minor	1,668.00	166.67	1,501.33	1,668.00	2,000.00	83.40%	332.00
10-36-5404 Mobile Technology Expense	71.81	83.33	(11.52)	646.38	1,000.00	64.64%	353.62
10-36-5407 Insurance - Vehicles	0.00	83.33	(83.33)	351.50	1,000.00	35.15%	648.50
10-36-5410 Vehicle Replacement Fund	0.00	583.33	(583.33)	0.00	7,000.00	0.00%	7,000.00
Fire Marshal/Building Official Totals	37,054.58	37,884.16	(829.58)	270,373.18	454,610.00	59.47%	184,236.82

10 - General Fund Capital and Planning Projects	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
10-90-5610 Land Purchase and	0.00	12,500.00	(12,500.00)	17,000.00	150,000.00	11.33%	133,000.00
10-90-5620 Building Purchase,	0.00	0.00	0.00	3,028,828.37	0.00	0.00%	(3,028,828.37)
10-90-5620 Building Purchase,	4,588.50	12,500.00	(7,911.50)	26,512.40	150,000.00	17.67%	123,487.60
10-90-5630 Furniture & Equipment	0.00	8,333.33	(8,333.33)	0.00	100,000.00	0.00%	100,000.00
10-90-5660 Contingency/Reserves	0.00	12,500.00	(12,500.00)	0.00	150,000.00	0.00%	150,000.00
Capital and Planning Projects Totals	4,588.50	45,833.33	(41,244.83)	3,072,340.77	550,000.00	558.61%	(2,522,340.77
Expense Totals	381,933.14	619,060.02	(237,126.88)	8,873,252.87	7,428,720.00	119.45%	(1,444,532.87

12 - Project Fund Series 2022	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Expense Summary							
Professional/Contract Services	48,230.14	0.00	48,230.14	2,790,818.29	0.00	0.00%	(2,790,818.29)
Materials & Supplies	0.00	0.00	0.00	17,489.59	0.00	0.00%	(17,489.59)
Expense Totals	48,230.14	0.00	48,230.14	2,808,307.88	0.00	0.00%	(2,808,307.88

12 - Project Fund Series 2022 Administration	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
Materials & Supplies	0.00	0.00	0.00	17,489.59	0.00	0.00%	(17,489.59)
Professional/Contract Services	48,230.14	0.00	48,230.14	2,790,818.29	0.00	0.00%	(2,790,818.29)
Administration Totals	48,230.14	0.00	48,230.14	2,808,307.88	0.00	0.00%	(2,808,307.88
Expense Total	48,230.14	0.00	48,230.14	2,808,307.88	0.00	0.00%	(2,808,307.88

12 - Project Fund Series 2022 Administration	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
12-10-5206 Professional Services	13,399.00	0.00	13,399.00	46,899.00	0.00	0.00%	(46,899.00)
12-10-5208 Engineering Services	1,237.89	0.00	1,237.89	5,804.19	0.00	0.00%	(5,804.19)
12-10-5229 Contractual Services	33,593.25	0.00	33,593.25	2,738,115.10	0.00	0.00%	(2,738,115.10)
12-10-5314 Computer & Technology	0.00	0.00	0.00	17,489.59	0.00	0.00%	(17,489.59)
Administration Totals	48,230.14	0.00	48,230.14	2,808,307.88	0.00	0.00%	(2,808,307.88
Expense Totals	48,230.14	0.00	48,230.14	2,808,307.88	0.00	0.00%	(2,808,307.88

20 - Crime Control and Prevention District Fund	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Revenue Summary							
Sales Tax	21,270.28	0.00	21,270.28	183,912.99	0.00	0.00%	(183,912.99)
Revenue Totals	21,270.28	0.00	21,270.28	183,912.99	0.00	0.00%	(183,912.99)
Expense Summary							
Personnel Services	0.00	1,416.67	(1,416.67)	1,523.33	17,000.00	8.96%	15,476.67
Professional/Contract Services	1,252.40	3,466.66	(2,214.26)	21,899.62	41,600.00	52.64%	19,700.38
Materials & Supplies	3,204.75	6,366.65	(3,161.90)	33,582.24	76,400.00	43.96%	42,817.76
Capital Outlay	0.00	27,083.33	(27,083.33)	66,777.02	325,000.00	20.55%	258,222.98
Expense Totals	4,457.15	38,333.31	(33,876.16)	123,782.21	460,000.00	26.91%	336,217.79

20 - Crime Control and Prevention District Fund	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Sales Tax							
20-4112 CCPD - Sales Tax	21,270.28	0.00	21,270.28	183,912.99	0.00	0.00%	(183,912.99)
Sales Tax Totals	21,270.28	0.00	21,270.28	183,912.99	0.00	0.00%	(183,912.99)
Revenue Totals	21,270.28	0.00	21,270.28	183,912.99	0.00	0.00%	(183,912.99)

20 - Crime Control and Prevention Dist Police	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
Capital Outlay	0.00	27,083.33	(27,083.33)	66,777.02	325,000.00	20.55%	258,222.98
Materials & Supplies	3,204.75	6,366.65	(3,161.90)	33,582.24	76,400.00	43.96%	42,817.76
Personnel Services	0.00	1,416.67	(1,416.67)	1,523.33	17,000.00	8.96%	15,476.67
Professional/Contract Services	1,252.40	3,466.66	(2,214.26)	21,899.62	41,600.00	52.64%	19,700.38
Police Totals	4,457.15	38,333.31	(33,876.16)	123,782.21	460,000.00	26.91%	336,217.79
Expense Total	4,457.15	38,333.31	(33,876.16)	123,782.21	460,000.00	26.91%	336,217.79

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20 - Crime Control and Prevention Dist Police	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
20-20-5104 Salaries - Overtime	0.00	1,416.67	(1,416.67)	1,523.33	17,000.00	8.96%	15,476.67
20-20-5206 Professional Services	38.82	833.33	(794.51)	6,712.55	10,000.00	67.13%	3,287.45
20-20-5214 Advertising/Printing Expense	0.00	625.00	(625.00)	300.06	7,500.00	4.00%	7,199.94
20-20-5222 Investigations	0.00	333.33	(333.33)	858.41	4,000.00	21.46%	3,141.59
20-20-5223 Training & Travel	1,213.58	1,250.00	(36.42)	8,988.60	15,000.00	59.92%	6,011.40
20-20-5230 Radio Service	0.00	425.00	(425.00)	5,040.00	5,100.00	98.82%	60.00
20-20-5301 Office Supplies	0.00	208.33	(208.33)	904.79	2,500.00	36.19%	1,595.21
20-20-5303 Public Education & Training	1,148.21	333.33	814.88	1,148.21	4,000.00	28.71%	2,851.79
20-20-5307 Investigation Supplies	0.00	333.33	(333.33)	0.00	4,000.00	0.00%	4,000.00
20-20-5314 Computer & Technology	1,676.71	2,083.33	(406.62)	15,552.11	25,000.00	62.21%	9,447.89
20-20-5315 Computer Software/License	100.00	1,333.33	(1,233.33)	3,521.60	16,000.00	22.01%	12,478.40
20-20-5316 Equipment Repair/Parts	0.00	416.67	(416.67)	2,721.94	5,000.00	54.44%	2,278.06
20-20-5317 Equipment & Other Rentals	0.00	333.33	(333.33)	2,375.85	4,000.00	59.40%	1,624.15
20-20-5319 Vehicle Repairs & Maintenance	9.25	325.00	(315.75)	4,760.71	3,900.00	122.07%	(860.71)
20-20-5328 Small Tools & Minor	270.58	916.67	(646.09)	2,019.60	11,000.00	18.36%	8,980.40
20-20-5330 Miscellaneous	0.00	83.33	(83.33)	577.43	1,000.00	57.74%	422.57
20-20-5630 Furniture & Equipment	0.00	20,833.33	(20,833.33)	0.00	250,000.00	0.00%	250,000.00
20-20-5650 Vehicles & Machinery	0.00	6,250.00	(6,250.00)	66,777.02	75,000.00	89.04%	8,222.98
Police Totals	4,457.15	38,333.31	(33,876.16)	123,782.21	460,000.00	26.91%	336,217.79
Expense Totals	4,457.15	38,333.31	(33,876.16)	123,782.21	460,000.00	26.91%	336,217.79

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21 - Law Enforcement	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Revenue Summary							
Fines & Forfeitures	1,585.50	0.00	1,585.50	1,585.50	0.00	0.00%	(1,585.50)
Revenue Totals	1,585.50	0.00	1,585.50	1,585.50	0.00	0.00%	(1,585.50)

21 - Law Enforcement	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Fines & Forfeitures							
21-4215 Asset Forfeiture	1,585.50	0.00	1,585.50	1,585.50	0.00	0.00%	(1,585.50)
Fines & Forfeitures Totals	1,585.50	0.00	1,585.50	1,585.50	0.00	0.00%	(1,585.50)
Revenue Totals	1,585.50	0.00	1,585.50	1,585.50	0.00	0.00%	(1,585.50)

30 - Capital Improvements Plan Fund (Debt Service)	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Expense Summary							
Debt Service	0.00	82,134.75	(82,134.75)	985,617.09	985,617.00	100.00%	(0.09)
Expense Totals	0.00	82,134.75	(82,134.75)	985,617.09	985,617.00	100.00%	(0.09)

30 - Capital Improvements Plan Fund Adminstration	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
Debt Service	0.00	82,134.75	(82,134.75)	985,617.09	985,617.00	100.00%	(0.09)
Adminstration Totals	0.00	82,134.75	(82,134.75)	985,617.09	985,617.00	100.00%	(0.09)
Expense Total	0.00	82,134.75	(82,134.75)	985,617.09	985,617.00	100.00%	(0.09)

30 - Capital Improvements Plan Fund ( Adminstration	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
30-10-5501 Debt Principal	0.00	6,250.00	(6,250.00)	440,000.00	75,000.00	586.67%	(365,000.00)
30-10-5502 Bond Principal	0.00	30,416.67	(30,416.67)	0.00	365,000.00	0.00%	365,000.00
30-10-5511 Interest on Bonds	0.00	43,598.08	(43,598.08)	195,052.09	523,177.00	37.28%	328,124.91
30-10-5513 Interest on Debt	0.00	1,870.00	(1,870.00)	350,565.00	22,440.00	1562.23%	(328,125.00)
Adminstration Totals	0.00	82,134.75	(82,134.75)	985,617.09	985,617.00	100.00%	(0.09)
Expense Totals	0.00	82,134.75	(82,134.75)	985,617.09	985,617.00	100.00%	(0.09)

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35 - Capital Improvements Plan Fund (Local)	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Revenue Summary							
Miscellaneous	0.00	0.00	0.00	24,938.26	0.00	0.00%	(24,938.26)
Revenue Totals	0.00	0.00	0.00	24,938.26	0.00	0.00%	(24,938.26)
Expense Summary							
Professional/Contract Services	0.00	0.00	0.00	25,708.75	0.00	0.00%	(25,708.75)
Not Categorized	0.00	0.00	0.00	24,938.26	0.00	0.00%	(24,938.26)
Expense Totals	0.00	0.00	0.00	50,647.01	0.00	0.00%	(50,647.01)

35 - Capital Improvements Plan Fund (Local)	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Miscellaneous							
35-4806 TWDB Revenues	0.00	0.00	0.00	24,938.26	0.00	0.00%	(24,938.26)
Miscellaneous Totals	0.00	0.00	0.00	24,938.26	0.00	0.00%	(24,938.26)
Revenue Totals	0.00	0.00	0.00	24,938.26	0.00	0.00%	(24,938.26)

35 - Capital Improvements Plan Fund Administration	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
Not Categorized	0.00	0.00	0.00	24,938.26	0.00	0.00%	(24,938.26)
Professional/Contract Services	0.00	0.00	0.00	25,708.75	0.00	0.00%	(25,708.75)
Administration Totals	0.00	0.00	0.00	50,647.01	0.00	0.00%	(50,647.01)
Expense Total	0.00	0.00	0.00	50,647.01	0.00	0.00%	(50,647.01)

35 - Capital Improvements Plan Fund ( Administration	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
35-10-5208 Engineering Services	0.00	0.00	0.00	25,708.75	0.00	0.00%	(25,708.75)
35-10-5239 TWDB Share of Expenditures	0.00	0.00	0.00	24,938.26	0.00	0.00%	(24,938.26)
Administration Totals	0.00	0.00	0.00	50,647.01	0.00	0.00%	(50,647.01)
Expense Totals	0.00	0.00	0.00	50,647.01	0.00	0.00%	(50,647.01)

36 - Public Safety Grants	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Revenue Summary							
Grant Income	0.00	0.00	0.00	1,148.10	0.00	0.00%	(1,148.10)
Revenue Totals	0.00	0.00	0.00	1,148.10	0.00	0.00%	(1,148.10)
Expense Summary							
Professional/Contract Services	320.00	0.00	320.00	545.00	0.00	0.00%	(545.00)
Materials & Supplies	0.00	0.00	0.00	33,716.10	0.00	0.00%	(33,716.10)
Expense Totals	320.00	0.00	320.00	34,261.10	0.00	0.00%	(34,261.10)

36 - Public Safety Grants	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Grant Income							
36-4803 State & Federal Grants	0.00	0.00	0.00	1,148.10	0.00	0.00%	(1,148.10)
Grant Income Totals	0.00	0.00	0.00	1,148.10	0.00	0.00%	(1,148.10)
Revenue Totals	0.00	0.00	0.00	1,148.10	0.00	0.00%	(1,148.10)

36 - Public Safety Grants State & Federal Grants	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
Materials & Supplies	0.00	0.00	0.00	33,716.10	0.00	0.00%	(33,716.10)
Professional/Contract Services	320.00	0.00	320.00	545.00	0.00	0.00%	(545.00)
State & Federal Grants Totals	320.00	0.00	320.00	34,261.10	0.00	0.00%	(34,261.10)
Expense Total	320.00	0.00	320.00	34,261.10	0.00	0.00%	(34,261.10)

36 - Public Safety Grants State & Federal Grants	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
36-20-5223 Training & Travel	320.00	0.00	320.00	545.00	0.00	0.00%	(545.00)
36-20-5328 Bullet Resis. Shield -	0.00	0.00	0.00	33,716.10	0.00	0.00%	(33,716.10)
State & Federal Grants Totals	320.00	0.00	320.00	34,261.10	0.00	0.00%	(34,261.10)
Expense Totals	320.00	0.00	320.00	34,261.10	0.00	0.00%	(34,261.10)

40 - Court Technology Fund	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Revenue Summary							
Fines & Forfeitures	1,213.05	0.00	1,213.05	7,207.09	0.00	0.00%	(7,207.09)
Revenue Totals	1,213.05	0.00	1,213.05	7,207.09	0.00	0.00%	(7,207.09)

40 - Court Technology Fund	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Fines & Forfeitures							
40-4707 Court Technology Fee	1,213.05	0.00	1,213.05	7,207.09	0.00	0.00%	(7,207.09)
Fines & Forfeitures Totals	1,213.05	0.00	1,213.05	7,207.09	0.00	0.00%	(7,207.09)
Revenue Totals	1,213.05	0.00	1,213.05	7,207.09	0.00	0.00%	(7,207.09)

Fines & Forfeitures

**Revenue Totals** 

41 - Court Security Fund	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Revenue Summary							

1,482.18

1,482.18

0.00

0.00

1,482.18

1,482.18

0.00

0.00

0.00%

0.00%

8,819.18

8,819.18

(8,819.18)

(8,819.18)

41 - Court Security Fund	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Fines & Forfeitures							
41-4708 Court Security Fee	1,482.18	0.00	1,482.18	8,819.18	0.00	0.00%	(8,819.18)
Fines & Forfeitures Totals	1,482.18	0.00	1,482.18	8,819.18	0.00	0.00%	(8,819.18)
Revenue Totals	1,482.18	0.00	1,482.18	8,819.18	0.00	0.00%	(8,819.18)

50 - Vehicle Replacement Fund	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Revenue Summary							
Not Categorized	77,000.00	0.00	77,000.00	77,000.00	0.00	0.00%	(77,000.00)
Revenue Totals	77,000.00	0.00	77,000.00	77,000.00	0.00	0.00%	(77,000.00)
Expense Summary							
Capital Outlay	0.00	0.00	0.00	13,371.00	0.00	0.00%	(13,371.00)
Expense Totals	0.00	0.00	0.00	13,371.00	0.00	0.00%	(13,371.00)

50 - Vehicle Replacement Fund	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% of Budget	Budget Remaining
Not Categorized							
50-8000 Transfer In	77,000.00	0.00	77,000.00	77,000.00	0.00	0.00%	(77,000.00)
Not Categorized Totals	77,000.00	0.00	77,000.00	77,000.00	0.00	0.00%	(77,000.00)
Revenue Totals	77,000.00	0.00	77,000.00	77,000.00	0.00	0.00%	(77,000.00)

50 - Vehicle Replacement Fund Administration	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
Capital Outlay	0.00	0.00	0.00	13,371.00	0.00	0.00%	(13,371.00)
Administration Totals	0.00	0.00	0.00	13,371.00	0.00	0.00%	(13,371.00)
Expense Total	0.00	0.00	0.00	13,371.00	0.00	0.00%	(13,371.00)

50 - Vehicle Replacement Fund Administration	Current Month Actual	Current Month Budget	Budget Variance	YTD Actual	Annual Budget	% Budget Used	Budget Remaining
50-10-5650 Vehicles & Machinery	0.00	0.00	0.00	13,371.00	0.00	0.00%	(13,371.00)
Administration Totals	0.00	0.00	0.00	13,371.00	0.00	0.00%	(13,371.00)
Expense Totals	0.00	0.00	0.00	13,371.00	0.00	0.00%	(13,371.00)

Account Type	Account Numbe	r Description	Balance	Total
10 - General Fu	und			
Assets				
10-	1000	Cash / Due From Consolidated Cash	6,776,450.46	
10-	1002	Retainer Account	0.00	
10-	1003	First State Bank - Manvel	150,135.93	
10-	1004	Petty Cash	300.00	
10-	1005	Texas Advantage - CD	6,133.33	
10-	1006	TexStar CD	112,560.00	
10-	1007	Veritex - CD 5471	93,762.18	
10-	1008	Veritex - CD 7818	160,384.00	
10-	1009	Texas First Bank - TWDB	0.00	
10-	1100	Accounts Receivable	0.00	
10-	1110	Due from IRS	0.00	
10-	1111	Sales Tax Receivable	88,294.00	
10-	1112	Allowance for Fines Receivable	(1,140,442.04)	
10-	1113	Fines Receivable	1,200,465.00	
10-	1114	Property Taxes Receivable	35,005.00	
10-	1115	Property Tax Receivable - P & I	12,771.00	
10-	1302	Due from Retainer Fund	101,689.00	
10-	1303	Due from Project Fund Series 2022	(1,303,353.38)	
Tota	al Assets		6,294,154.48	

6,294,154.48

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Account Type	Account Nur	nber Description	Balance	Total
10 - General Fu	ınd			
Liabilities				
10-2	2000	Due To Consolidated Cash / Accounts Payable	(50,271.66)	
10-2	2001	Accounts Payble at Year End	(11,528.93)	
10-2	2101	Due to Other Funds - CCPD	256,987.00	
10-2	2200	Wages Payable	16,688.99	
10-2	2201	Employee Dental Insurance	286.22	
10-2	2202	Employee Vision Insurance	0.00	
10-2	2203	Federal Tax Payable	5,015.00	
10-2	2204	Social Security/Medicare Payable	0.00	
10-2	2205	TMRS Payable	4,322.13	
10-2	2206	Texas Workforce Commission Payable	(2,606.31)	
10-2	2207	Health & Life Insurance Payable	(4,525.38)	
10-2	2208	Child Support Payable	(1,256.04)	
10-2	2209	457(b) Payable	0.00	
10-2	2300	State Fees	10,890.42	
10-2	2301	Collections	0.00	
10-2	2302	Bond Liability Account	0.00	
10-2	2303	Refunds Payable	0.00	
10-2	2304	Credit Card Fee	3,863.00	
10-2	2305	Deferred Revenues - Fines	60,023.00	
10-2	2400	Road Damage Deposit	0.00	
10-2	2405	Deferred Inflows-Prop taxes	47,629.00	
10-2	2410	Bond 1 - Series 2020	0.00	
10-2	2500	American Rescue Plan Fund	0.00	
10-2	2501	Baseball Field Reserve	9,901.00	
10-2	2502	Baymark Pipeline LLC	0.00	
10-2	2503	Baymark Pipeline LLC: Baymark P - Engr/Inspctn/Legal	0.00	
10-2	2504	Cherry Crushed Concrete	0.00	
10-2	2505	DR Horton/MUD 87	0.00	
10-2	2506	Early Plat - Sierra V W Sec 5	0.01	
10-2	2507	Early Plat SVW Crystal V Dr-Ph3	0.00	
10-2	2508	Early Plat SVW Sub Sec 4	0.00	
10-2	2509	Formosa/Lav Pipeline-TRC	0.00	
10-2	2510	M2E3/Enterprise Pipeline	0.00	
10-2	2511	Meridiana Escrow	(770.00)	
10-2	2512	Old Airline Market-Axis Dev	(0.50)	

Account Type	Account Numbe	r Description	Balance	Total
10 - General Fu	und			
Liabilities				
10-2	2513	Sierra Vista - Land Tejas	0.00	
10-2	2514	Sierra Vista West - Land Tejas	0.00	
10-2	2515	South Texas NGL Pipeline, LLC	0.00	
10-2	2516	South Texas NGL Pipeline, LLC: South TX NGL-Engr/Inspct/Legal	0.00	
10-2	2517	Sterling Lakes - Land Tejas	0.00	
10-2	2518	Capital Contribution - CR 64	1,731,000.00	
10-2	2519	Earlt Platting Escrow Sec 12	0.00	
10-2	2520	Early Plat Escrow - SVW Sec 6	0.00	
10-2	2522	Property Delq Tax - TIF 100%	(0.30)	
10-2	2523	Property Tax TIF - 100%	10,148.27	
10-2	2524	Meritage Homes of Texas, LLC	0.00	
10-2	2525	Corona Virus Relief Fund	0.00	
10-2	2526	Public Safety Building Reserve	0.00	
10-2	2527	Public Park Reserves	0.00	
10-2	2528	Early Plat - Sierra VW Sec 7	0.01	
10-2	2530	Early Plat - Sierra VW Sec 8	0.00	
10-2	2531	Early Plat - Sierra VW Sec 9	0.00	
10-2	2533	Police Training Fund	(9,554.99)	
10-2	2534	Unearned Revenue (Merid Sec 58)	0.00	
10-2	2535	Unearned Revenue (Merid Sec 57)	0.00	
10-2	2540	Early Plat - Sierra VW Sec 10	0.00	
10-2	2602	Due to Retainer Fund	(29,869.00)	
10-2	2603	Due to Crime Prevention	(6,620.32)	
10-2	2604	Due to CIP (Local)	0.00	
10-2	2605	Due to State & Federal Grants	0.00	
10-2	2606	Due to ARPA Fund	402,129.20	
10-7	7001	Transfer to Vehicle Replacement	(147,000.00)	
Tota	al Liabilities		2,294,879.82	

#### Fund Balance

10-3000	Fund Balance	3,980,881.16
10-3001	Fund Balance Committed	0.00
10-3002	Fund Balance Assigned	275,000.00

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Account Type	Account Number	Description	Balance	Total
10 - General F	und			
Fund Balance				
Tot	al Fund Balance		4,255,881.16	
	Tot	al Revenue	7,889,413.01	
	Tot	al Expenses	8,873,252.87	
	Cui	rrent Year Increase (Decrease)	(256,606.50)	
	Fur	nd Balance Total	4,255,881.16	
	Cui	rrent Year Increase (Decrease)	(256,606.50)	
	Tot	al Fund Balance/Equity	3,999,274.66	
Tot	al Liabilities & Fund Ba	alance		6,294,154.48

Account Type	Account Number	Description	Balance	Total
11 - Retainer F	und			
Assets				
11-1	1000 0	Cash / Due From Consolidated Cash	0.00	
11-3	1002 F	Retainer Account	510,024.89	
11-1	1301 [	Due from General Fund	(151,558.00)	
Tota	al Assets		358,466.89	
			_	358,466.89

Account Type	Account Numbe	r Description	Balance	Total
11 - Retainer F	Fund			
Liabilities				
11-	2000	Due To Consolidated Cash / Accounts Payable	0.00	
11-	2001	Accounts Payble at Year End	(4,287.50)	
11-	2010	Accounts Payable	3,325.00	
11-	2200	Wages Payable	0.00	
11-	2400	Road Damage Deposit	340,370.65	
11-	2502	Baymark Pipeline LLC	1.00	
11-	2503	Baymark Pipeline LLC: Baymark P - Engr/Inspctn/Legal	0.00	
11-	2504	Cherry Crushed Concrete	23,200.00	
11-	2505	DR Horton/MUD 87	(12,621.37)	
11-	2509	Formosa/Lav Pipeline-TRC	10,826.04	
11-	2510	M2E3/Enterprise Pipeline	(45,393.15)	
11-	2511	Meridiana Escrow	4,345.00	
11-	2512	Old Airline Market-Axis Dev	208.00	
11-	2513	Sierra Vista - Land Tejas	1,748.10	
11-	2514	Sierra Vista West - Land Tejas	24,862.65	
11-	2515	South Texas NGL Pipeline, LLC	1.00	
11-	2516	South Texas NGL Pipeline, LLC: South TX NGL-Engr/Inspct/Legal	0.00	
11-	2517	Sterling Lakes - Land Tejas	6,296.59	
11-	2521	Meritage/Rise- BCMUD 57	3,838.10	
11-	2529	Meridiana PUD Amendment	7,537.50	
11-	2536	Rally 288 West PUD	(7,292.03)	
11-	2537	Southern Star PUD	(4,118.79)	
11-	2538	PUD Hines Investments	(7,255.00)	
11-	2539	SVW Entertainment Dist PUD	4,997.11	
11-	2601	Due to General Fund	0.00	
Tot	al Liabilities		350,588.90	

#### Fund Balance

11-3000	Fund Balance	0.00		
Total Fund Balance		0.00		
Account Type	Account Number	Description	Balance	Total
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11 - Retainer Fu	und			
	Tot	al Revenue	0.00	
	Tota	al Expenses	0.00	
	Cur	rent Year Increase (Decrease)	7,877.99	
	Fun	d Balance Total	0.00	
	Cur	rent Year Increase (Decrease)	7,877.99	
	Tota	al Fund Balance/Equity	7,877.99	
Tota	l Liabilities & Fund Ba	lance		358,466.89

Account Type	Account Numbe	r Description	Balance	Total
12 - Project Fu	Ind Series 2022			
Assets				
12-	1000	Cash / Due From Consolidated Cash	(2,772,881.40)	
12-	1010	Project Fund Series 2022	9,197,323.49	
12-	1011	Proj Fund Series 2022 - Frost Investments	3,499,323.13	
12-	1301	Due from General Fund	0.00	
Tot	al Assets		9,923,765.22	
				9,923,765.22

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Account Type	Account Numbe	er Description	Balance	Total
12 - Project	Fund Series 2022			
Liabilities				
1	12-2000	Due To Consolidated Cash / Accounts Payable	491,676.62	
1	12-2200	Wages Payable	0.00	
1	12-2411	Project Fund Series 22 - Unearned Revenue	0.00	
1	12-2601	Due to General Fund	(1,303,353.38)	
Т	Total Liabilities		(811,676.76)	
Fund Balance				
1	12-3000	Fund Balance	0.00	
Т	Fotal Fund Balance		0.00	
		Total Revenue	0.00	
		Total Expenses	2,808,307.88	
		Current Year Increase (Decrease)	10,735,441.98	
		Fund Balance Total	0.00	
		Current Year Increase (Decrease)	10,735,441.98	
		Total Fund Balance/Equity	10,735,441.98	
Т	Fotal Liabilities & Fun	id Balance		9,923,765.22

Account Type	Account Number	Description	Balance	Total
20 - Crime Co District Fund	ontrol and Prevention	on		
Assets				
20	)-1000 C	Cash / Due From Consolidated Cash	147,217.96	
20	)-1301 E	Due from General Fund	250,366.68	
20	)-1302 S	Sales Tax Receivable Crime Prevention District	34,888.00	
Тс	otal Assets		432,472.64	
				432,472.64

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Account Tyr	pe Account Numb	er Description	Balance	Total
20 - Crime District Fu	Control and Preven nd	tion		
Liabilities	20-2000	Due To Consolidated Cash / Accounts Payable	4,022.15	
	Total Liabilities		4,022.15	
Fund Baland	ce			
	20-3000	Fund Balance	375,576.15	
	Total Fund Balance		375,576.15	
		Total Revenue	183,912.99	
		Total Expenses	123,782.21	
		Current Year Increase (Decrease)	52,874.34	
		Fund Balance Total	375,576.15	
		Current Year Increase (Decrease)	52,874.34	
		Total Fund Balance/Equity	428,450.49	
	Total Liabilities & Fur	nd Balance		432,472.64

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Account Type	Account Number	Description	Balance	Total
21 - Law Enfo	orcement			
Assets				
21	L-1000 C	Cash / Due From Consolidated Cash	1,585.50	
Тс	otal Assets		1,585.50	
			=	1,585.50

Account Type Account Numb	er Description	Balance	Tota
21 - Law Enforcement Liabilities			
21-2000	Due To Consolidated Cash / Accounts Payable	0.00	
21-2200	Wages Payable	0.00	
Total Liabilities		0.00	
Fund Balance			
21-3000	Fund Balance	0.00	
Total Fund Balance		0.00	
	Total Revenue	1,585.50	
	Total Expenses	0.00	
	Current Year Increase (Decrease)	1,585.50	
	Fund Balance Total	0.00	
	Current Year Increase (Decrease)	1,585.50	
	Total Fund Balance/Equity	1,585.50	
Total Liabilities & Fur	nd Balance		1,585.50

Account Type	Account Numbe	r Description	Balance	Total
30 - Capital I Fund (Debt S	Improvements Plar Service)	ı		
Assets				
3	0-1000	Cash / Due From Consolidated Cash	(911,719.09)	
3	0-1114	Property Taxes Receivable	996.00	
3	0-1115	Property Tax Receivable - P & I	234.00	
Т	otal Assets		(910,489.09)	
			-	(910,489.09)

Account Typ	e Account Num	nber Description	Balance	Total
30 - Capita Fund (Debt Liabilities	l Improvements P t Service)	Plan		
	30-2000	Due To Consolidated Cash / Accounts Payable	0.00	
	30-2405	Deferred Inflows-Prop taxes	1,230.00	
	Total Liabilities		1,230.00	
Fund Balanc	e			
	30-3000	Fund Balance	73,898.00	
	Total Fund Balance		73,898.00	
		Total Revenue Total Expenses	0.00 985,617.09	
		Current Year Increase (Decrease)	(985,617.09)	
		Fund Balance Total	73,898.00	
		Current Year Increase (Decrease)	(985,617.09)	
		Total Fund Balance/Equity	(911,719.09)	
	Total Liabilities & F	und Balance	_	(910,489.09)

Account Type	Account Number	Description	Balance	Total
35 - Capital I Fund (Local)	mprovements Plan			
Assets				
35	5-1000	Cash / Due From Consolidated Cash	(183,697.57)	
35	5-1101	Grant / Funding Account	58,137.74	
35	5-1301	Due from General Fund	0.00	
Тс	otal Assets		(125,559.83)	
			-	(125,559.83)

Account Type	Account Numbe	er Description	Balance	Total
35 - Capital 1 Fund (Local) Liabilities	Improvements Pla	n		
3	5-2000	Due To Consolidated Cash / Accounts Payable	0.00	
3	5-2411	TWDB Unearned Revenue	58,137.74	
3	5-2526	Public Safety Building Reserve	0.00	
3	5-2532	Road Works Fund	(189,610.44)	
т	otal Liabilities		(131,472.70)	
Fund Balance				
3	5-3000	Fund Balance	31,621.62	
Т	otal Fund Balance		31,621.62	
		Total Revenue	24,938.26	
		Total Expenses	50,647.01	
		Current Year Increase (Decrease)	(25,708.75)	
		Fund Balance Total	31,621.62	
		Current Year Increase (Decrease)	(25,708.75)	
		Total Fund Balance/Equity	5,912.87	
Т	otal Liabilities & Fun	d Balance		(125,559.83)

Account Type	Account Number	Description	Balance	Total
36 - Public Safe	ety Grants			
Assets				
36-1	1000 C	Cash / Due From Consolidated Cash	(31,650.34)	
36-1	1301 E	Due from General Fund	0.00	
Tota	al Assets		(31,650.34)	
			-	(31,650.34)

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Account Typ	e Account Numb	er Description	Balance	Total
<b>36 - Public</b> Liabilities	Safety Grants			
Liabilitieo	36-2000	Due To Consolidated Cash / Accounts Pavable	320.00	
	36-2200	Wages Payable	0.00	
	Total Liabilities		320.00	
Fund Balanc	e			
	36-3000	Fund Balance	(9,987.34)	
	Total Fund Balance		(9,987.34)	
		Total Revenue	1,148.10	
		Total Expenses	34,261.10	
		Current Year Increase (Decrease)	(21,983.00)	
		Fund Balance Total	(9,987.34)	
		Current Year Increase (Decrease)	(21,983.00)	
		Total Fund Balance/Equity	(31,970.34)	
	Total Liabilities & Fur	nd Balance		(31,650.34)

Account Type	Account Number	Description	Balance	Total
40 - Court Tec	hnology Fund			
Assets				
40-	-1000 Ca	sh / Due From Consolidated Cash	8,177.67	
Tot	al Assets		8,177.67	
				8,177.67
			-	

Account Type	e Account Numb	er Description	Balance	Total
<b>40 - Court</b> T Liabilities	Fechnology Fund			
	40-2000	Due To Consolidated Cash / Accounts Payable	0.00	
	Total Liabilities		0.00	
Fund Balance	2			
	40-3000	Fund Balance	970.13	
	Total Fund Balance		970.13	
		Total Revenue	7,207.09	
		Total Expenses	0.00	
		Current Year Increase (Decrease)	7,207.54	
		Fund Balance Total	970.13	
		Current Year Increase (Decrease)	7,207.54	
		Total Fund Balance/Equity	8,177.67	
	Total Liabilities & Fur	nd Balance		8,177.67

Account Type	Account Number	Description	Balance	Total
41 - Court Se	curity Fund			
Assets				
41	L-1000 C	ash / Due From Consolidated Cash	18,038.21	
Tc	otal Assets		18,038.21	
			=	18,038.21

Account Typ	e Account Numbe	er Description	Balance	Total
<b>41 - Court</b> : Liabilities	Security Fund			
	41-2000	Due To Consolidated Cash / Accounts Payable	0.00	
	Total Liabilities		0.00	
Fund Balanc	e			
	41-3000	Fund Balance	9,218.67	
	Total Fund Balance		9,218.67	
		Total Revenue	8,819.18	
		Total Expenses	0.00	
		Current Year Increase (Decrease)	8,819.54	
		Fund Balance Total	9,218.67	
		Current Year Increase (Decrease)	8,819.54	
		Total Fund Balance/Equity	18,038.21	
	Total Liabilities & Fund	d Balance		18,038.21

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Account Typ	e Account Numbe	er Description	Balance	Total
45 - Ameri (ARPA) Fu	can Rescue Plan Act nd			
Assets				
	45-1000	Cash / Due From Consolidated Cash	0.00	
	45-1101	Grant / Funding Account	498,622.00	
	45-1301	Due from General Fund	402,129.20	
	Total Assets		900,751.20	
				900,751.20

Account Type	e Account Numbe	er Description	Balance	Total
45 - America (ARPA) Fund	an Rescue Plan Act d			
Liabilities				
2	45-2000	Due To Consolidated Cash / Accounts Payable	0.00	
2	45-2200	Wages Payable	0.00	
2	45-2411	Coronavirus Unearned Revenue	900,751.00	
Г	Total Liabilities		900,751.00	
Fund Balance				
2	45-3000	Fund Balance	0.19	
٢	Fotal Fund Balance		0.19	
		Total Revenue	0.00	
		Total Expenses	0.00	
		Current Year Increase (Decrease)	0.01	
		Fund Balance Total	0.19	
		Current Year Increase (Decrease)	0.01	
		Total Fund Balance/Equity	0.20	
Г	Total Liabilities & Fun	d Balance		900,751.20
			-	-

Account Type	Account Number	Description	Balance	Total
50 - Vehicle R	Replacement Fund			
Assets				
50	0-1000	Cash / Due From Consolidated Cash	133,629.00	
То	tal Assets		133,629.00	
			_	133,629.00
			-	

Account Typ	e Account Numbe	er Description	Balance	Total
50 - Vehicl	e Replacement Fund	l i i i i i i i i i i i i i i i i i i i		
Liabilities				
	50-2000	Due To Consolidated Cash / Accounts Payable	0.00	
	Total Liabilities		0.00	
Fund Balanc	e			
	50-3000	Fund Balance	0.00	
	Total Fund Balance		0.00	
		Total Revenue	77,000.00	
		Total Expenses	13,371.00	
		Current Year Increase (Decrease)	133,629.00	
		Fund Balance Total	0.00	
		Current Year Increase (Decrease)	133,629.00	
		Total Fund Balance/Equity	133,629.00	
	Total Liabilities & Fund	d Balance		133,629.00

Account Type	Account Number	Description	Balance	Total
99 - Consolidat	ed Cash			
Assets				
99-1	1000	Cash	3,715,999.68	
99-1	1210	Due From General Fund	(217,567.66)	
99-1	1220	Due From Crime Prevention District Fund	4,077.15	
99-1	1230	Due From Debt Service Fund	0.00	
99-1	1235	Due From Capital Improvement Projects Fund	0.00	
99-1	1240	Due From Court Technology fund	0.00	
99-1	1241	Due From Court Security Fund	0.00	
99-1	1245	Due From American Rescue Plan Act (ARPA) Fund	0.00	
99-1	1250	Due From Vehicle Replacement Fund	0.00	
Tota	al Assets	_	3,502,509.17	

3,502,509.17

Account Type	Account Number	Description	Balance	Total
99 - Consolidate	ed Cash			
Liabilities				
99-20	000 Acco	unts Payable	(213,490.51)	
99-21	110 Due	To General Fund	6,258,006.00	
99-21	120 Due	To Crime Prevention District Fund	0.00	
99-21	130 Due	To Debt Service Fund	32,228.00	
99-21	135 Due	To Capital Improvement Projects Fund	0.00	
99-21	140 Due	To Court Technology fund	0.00	
99-21	141 Due	To Court Security Fund	0.00	
99-22	145 Due Func	To American Rescue Plan Act (ARPA) I	498,622.00	
99-21	150 Due	To Vehicle Replacement Fund	0.00	
99-22	200 Wag	es Payable	0.00	
99-29	999 Due	To Other Funds	(3,072,856.32)	
Total	Liabilities		3,502,509.17	
	Tota	l Revenue	0.00	
	Tota	l Expenses	0.00	
	Curr	ent Year Increase (Decrease)	0.00	
	Fund	l Balance Total	0.00	
	Curr	ent Year Increase (Decrease)	0.00	
	Tota	I Fund Balance/Equity	0.00	

Total Liabilities & Fund Balance

3,502,509.17

29 **95** 



12003 Iowa Colony Blv Iowa Colony Tx. 7758 Phone: 281-369-2471 Fax: 281-369-0005 www.iowacolonytx.gov

	Staff Report
Agenda Date:	July 11, 2023
Agenda Item: 48.	Variance Request for freestanding sign, corner of Crystal View and C.R
Project Description:	Variances to regulations of the Sign Ordinance 2016-19 Freestanding Sign Section 24 (C) Temporary Freestanding Sign.
Zoning Designation:	Residential Single Family
Building Official:	Albert Cantu

### **SUMMARY**

This request was made by Tim Johnson for a variance to The City of Iowa Colony Sign Ordinance 2016-19 Freestanding Sign Section 24 Temporary Freestanding Sign Subsection C Item 1 Size. The ordinance cited above requires that a temporary freestanding sign must have a maximum effective area of 32 sq-ft and a maximum height of 8ft.

This site is located at the SW corner of Crystal View Drive and County Road 48.



### Variance Request:

Request to place a sign that is larger than 32 sq-ft. The proposed sign would be 16ft tall by 20ft wide. The purpose of this sign is to share an exhibit that shows people in the area the planned amenities for Sierra Vista and to notify them the amenity is now under construction. This sign would be placed at the Southwest Corner of Crystal View Drive and County Road 48. The sign would be removed once the amenity opens.

### **RECOMMENDATION**

Staff feels that this sign is too large for this application. The adopted ordinance allows up to 32 sqft. The applicant is requesting a sign that is 320 sq-ft which is 10 times or 1000% larger than allowed by ordinance. The reason stated above, and application is not a reason for hardship that would warrant a billboard on this property.





# Sierra Vista Sign Variance Request July 2023



# **Proposed Sign Details**

Intended Purpose – Temporary sign to show general public and Sierra Vista

residents what is being built on the amenity site

```
Sign Size – 16' tall x 20' wide
```

Sign Material –

- 4 solid wood posts support the sign (similar to telephone poles)
- Solid wood frame wrapped in vinyl print

Length of Use – Temporary sign only in place for duration of construction. Will

be removed once construction has been completed



Item 11.



# Proposed Location – SW Corner of Crystal View Dr & CR 48





Item 11.









102 LAND \* TEJAS



# **Proposed Sign**



# **UNDER CONSTRUCTION**

**1. BASKETBALL COURT 3. RESTROOM/PAVILION 4. SPORTS/OPEN SPACE 14. BOCCE BALL COURT 15. PICKLEBALL COURT 16. CLUBHOUSE PAD SITE** 





# Thank You for Your Consideration



# Elevate Cloud-Based Unified Communication Solution

# **Scope of Work**

Prepared for: City of Iowa Colony

Presented on: 7/5/2023

Version 2.6

**Revision Number 01** 



Item 12.



### City of Iowa Colony Elevate Cloud-Based Unified Communication Solution SOW

### **Revision History**

Revision	Date	Name	Description of Change
1	1.6.23	Dana Landry	Initial design
2	7.5.23	Dana Landry	Updated phone style and quantities

### Acceptance of Scope of Work

The use of signatures on this Scope of Work is to ensure agreement by City of Iowa Colony on project objectives and the work to be performed by DataVox.

### Parties to Agreement

This Scope of Work (SOW) is made and entered into between DataVox, Inc., 6650 West Sam Houston Parkway South, Houston, Texas 77072 ("DataVox") and City of Iowa Colony , 3144 Meridiana Parkway, Iowa Colony, TX 77583 ("Customer"), as of the date listed on the title page of this document. **Terms** 

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

The prices, specifications, and conditions in this SOW are satisfactory, and are hereby accepted in their entirety. Customer hereby agrees to purchase the Service and authorizes DataVox to do the work, and provide the materials specified, and payment will be made as outlined in the Payment section of this document. Any changes to this SOW must be in writing and 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 SET FORTH IN SECTION **Error! Reference source not found.** . THE AGREEMENT IS INCORPORATED BY REFERENCE AS IF FULLY SET FORTH HEREIN. THERE ARE NO OTHER AGREEMENTS, OR WARRANTIES, ORAL OR WRITTEN, EXCEPT AS EXPRESSLY STATED IN THIS DOCUMENT. THIS AGREEMENT CANNOT BE MODIFIED EXCEPT IN WRITING AND SIGNED BY BOTH PARTIES.

Customer acknowledges having read and understood all the terms and conditions specified in this SOW and acknowledges receipt of a complete executed copy of this SOW. Customer understands and agrees that this SOW and all of the terms and conditions hereof shall be a binding, enforceable contract when signed by Customer and by an authorized representative of DataVox.

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### City of Iowa Colony Elevate Cloud-Based Unified Communication Solution SOW

#### **Approval Signatures**

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

	DataVox, Inc.	City of Iowa Colony		
Ву:	(Signature)	Ву:	(Signature)	
Name:		Name:		
Title:		Title:		
Date:		Date:		

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### City of Iowa Colony Elevate Cloud-Based Unified Communication Solution SOW

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## **1.0Executive Summary**

Under this Scope of Work ("SOW"), Customer will receive a cloud-based unified communication solution, powered by Elevate and Voice Telco Services. This SOW details the solution that DataVox will provide City of Iowa Colony, and describes the project management methodologies, pricing and other terms and conditions under this Agreement.

Under Elevate, Customer will receive a cloud-based telephone system, desktop software, and mobile app. For a detailed description of the products that DataVox is providing, see Section 4.0.

## **1.1 Primary Project Contacts**

The table lists the primary DataVox and City of Iowa Colony contacts for this project.

DataVox		City of Iowa Colony		
Name/Role	Contact Information	Name/Role	Contact Information	
Dana Landry Account Manager	Phone: 713-881-7180 Email: <u>danal@datavox.net</u>	Robert Hemminger City Manager	Phone:281-369-2471 Email: <u>rhemminger@iowacolonytx.gov</u>	

## **1.2 Project Location**

Services will be provided at the following locations:

Location	Address	
New Location – Single Site	3144 Meridiana Parkway, Iowa Colony, TX 77583	

## 2.0 Definitions

"Best Effort" means troubleshooting and diagnosis of the suspected issue, at the discretion of DataVox. Best effort does not guarantee any particular result, nor does DataVox promise to engage in a course of conduct to remediate any discovered issue.



## 3.0 Implementation

DataVox will provide the following implementation to deploy the Elevate solution.

Features	Standard
Network Assessment	Remote
Onboarding Gathering	Remote
Status Calls	Weekly Emails
System configuration and testing	Remote
Number Porting	Included
Hunt Groups	Up to 10
Call Queues	Up to 5
Day of Go-Live Support	8 Hours (Remote)
Next-Day Support	Customer contacts Customer Service
Desktop and Mobile Application Training	Videos/Written Documentation
Admin Training	1 Hour (Remote)
Analog fax	Remote
Phone/Device Installation	Customer
Physical Site Survey	N/A
Custom Third-Party System Integration	N/A

## 4.0In Scope Services

This section lists the in-scope services that DataVox will provide City of Iowa Colony.

## 4.1 Phones

DataVox will install and configure the following IP phones:

Phone	Name	Description QTY		
	Yealink T57W	<ul> <li>7" 800 x 480 capacitive adjustable touch screen</li> <li>Built-in Bluetooth 2.4 &amp; dual band 2.4G/5G Wi-Fi</li> <li>Gigabit Ethernet</li> <li>PoE support</li> <li>USB 2.0</li> </ul>	18	

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Phone	Name	Description	QTY
	Yealink EXP50	<ul> <li>4.3 Inch Color Screen LCD for T57W</li> </ul>	3
	Yealink T33G	<ul> <li>Yealink HD Voice</li> <li>2.4" 320 x 240-pixel color display with backlight</li> <li>Dual-port Gigabit Ethernet</li> <li>PoE support</li> <li>Opus codec support</li> <li>Up to 4 SIP accounts</li> <li>Local 5-way conferencing</li> <li>Support EHS Wireless Headset</li> <li>Unified Firmware</li> <li>Support YDMP/YMCS</li> <li>Stand with 2 adjustable angles wall mountable</li> </ul>	44

## 4.2 Conference Room Phones

DataVox will install and configure the following conference room phone:

Phone	Name	Description	QTY
	Yealink CP960	Full duplex IP Conference Room Phone	4
	Yealink CPW65	Wireless DECT Expansion Mics	4

## 4.3 Software

This section describes the software that DataVox will install and configure.

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Features	Elevate Pro User
Direct Dial Phone Number (DID)	√
Unlimited Local & Long Distance (domestic)	✓
Up to five (5) endpoints	√
PBX Features	√
Admin Portal	√
Desktop Client (Instant Messaging & Presence)	✓
Softphone	$\checkmark$
Voicemail/ Voicemail to Email	√
Voicemail to Email Transcription	√
Audio Conference Bridge	Up to 200 users
Online Meeting – via AnyMeeting	Up to 100 users
Video Meeting – via AnyMeeting	Up to 30 users
Call Recording	√
Webfax	✓
Business SMS	$\checkmark$
Mobile Application	✓
Receptionist & Expansion Module Mode	√
Active Directory, G Suite, Outlook, Slack, O365, MS Teams (Add-on) Sugar CRM, Zoho, and Zendesk Integrations	✓

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	Part	Description	
	Elevate Pro User	Includes Cloud PBX with unlimited local and long-distance calling, connection to up to (five) 5 devices, chat, file sharing (10 GB/user), Online Meeting (100 web participants per meeting). One (1) license is required for each Elevate Pro User in the organization.	62
	Cloud PBX Resource Line (500 min) One line of service used for a single lobby, conference, paging device or general-purpose phone. Includes 500 min of usage. Cloud PBX Resource Line (pay per use) One line of service used for a single lobby, conference, paging device or general-purpose phone. All usage billed per		4
	Cloud PBX Fax Line One line of service to be used with a fax machine. Requires a Fax Adapter (sold separately). Includes unlimited outbound local and long-distance business usage.Cloud PBX FaxCloud PBX Fax Line (500 min) One line of service to be used with a fax machine. Requires a Fax Adapter (sold separately). Includes 500 min of usage.Cloud PBX FaxCloud PBX Fax Line (pay per use) One line of service to be used with a fax machine. Requires a Fax Adapter (sold separately). All usage billed per minute.		0
	WebFax	One Web Fax is included free with each user. Receive faxes through a personal and confidential web- based fax service. Your faxes arrive as PDFs attached to email. Send faxes directly from your PC.	62
Auto Attendant		One Auto Attendant is included free with each HPBX account. An Automated Attendant greets callers and routes calls to the right person, department, or information 24 hours/day. It is completely customizable to meet the specific needs of your business. First Automated Attended included at no charge.	2

This section describes the licenses that DataVox will implement under the Elevate solution.

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## 5.0Project Out of Scope Services

The following services are outside the scope of work:

- 8 Procurement and installation of cabling, patch cords, racks, cabinets, and battery backups.
- ⊗ Procurement and installation of POE switches.
- Any network consulting services to configure existing network devices outside the network devices provided within this SOW.
- ⊗ Uninstalling existing voice or data systems.
- $\otimes$  Uninstalling existing phones.
- $\otimes$  Move furniture to install phones.
- ⊗ Training classes not listed in this SOW.
- $\otimes$  Documentation not listed in this SOW.

**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.

## 6.0 Support Services

DataVox includes a comprehensive support service agreement (SSA) for the term of the contract.

Support Service Agreement (SSA)	
Elevate Software Upgrades	✓
Basic Remote Programming Changes (Refer to Section 6.1)	✓
Phone Replacements	✓
Elevate Software Support	✓
Labor for Onsite or Remote Service-Related Issues	✓
No Trip Charges on Service Issues	✓
Priority DataVox Support & Guaranteed Response times	✓
Emergency Response 24x7x365	✓
Remote Emergency Response Within 30 Minutes	✓
Preferred Labor Rates	✓
Initial Diagnosis of Any Service Carrier Issues	✓
Priority Response Times for All Adds, Moves & Changes	✓



## 6.1 Basic Remote Programming

- Basic Remote Programing changes, requiring 15 minutes or less, completed by next business day, included but not limited to:
  - User phone decommissioning.
  - User phone name change.
  - Voicemail password reset.
  - User password reset.

- Configure user speed dials.
- Configure line appearance.
- Configure alerting name appearance.

## 6.2 Guaranteed Priority Response Times

DataVox agrees to provide the following response times for support issues.

Priority Level	Description	Response Time Remote	Response Time Dispatch	Service Availability
	• 50% or more of system users or stations unavailable			
Emergency	No incoming or outgoing calls	30 minutes	4 hours or less	24x7x365
	Voicemail down	or less		
	Significant impact to the business			
	Overhead paging down			
Non-Emergency	<ul> <li>Minimal impact to the business</li> </ul>	Next business day	Next business day	Monday-Friday 8:00am-5:00pm (CST) Excluding holidays
Basic Remote Programming	<ul> <li>Basic changes requiring 30 minutes or less for completion</li> </ul>	Next business day	Not Applicable	Monday-Friday 8:00am-5:00pm (CST) Excluding holidays

#### 6.3 Service Level Agreement

In addition to the response times stated herein, in the event Customer's service availability, as defined in the *Service Level Agreement*, falls below the stated threshold, DataVox will issue a credit to Customer for that monthly billing cycle.

A copy of the Service Level Agreement can be found at https://www.datavox.net/terms-and-conditions/.

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## 6.4 Out of Scope Services

All items listed below are out of scope and not covered by the Support Service Agreement.

- Ongoing troubleshooting of carrier voice services, such as, Internet connectivity, and digital trunk connectivity, including troubleshooting related to a failed Network Assessment.
- Labor and hardware replacement associated with customer-provided equipment.
- Out of warranty/non-supported equipment.
- Onsite installation, moves, adds and changes.
- Onsite response times are not guaranteed for locations outside of the Greater Houston area (Outside of the greater Houston area is defined as greater than 50 miles one way from the DataVox Corporate Headquarters located at 6650 W. Sam Houston Pkwy S., Houston, TX 77072.
- Certain complex faults or functionality issues may not be resolvable without the Customer upgrading the system to a version currently supported by the manufacturer at the customer's expense.
- As replacement parts are manufacture discontinued, some products or components may become increasingly scarce or require replacement with substitute parts. This may result in delays in response or repair intervals, may require upgrades to other components or the entire product itself replaced with manufacturer supported technology at customer's expense in order to ensure compatibility and preserve Supported Product functionality.

## 7.0 Baseline Responsibilities

This section provides a general list of DataVox and Customer responsibilities that are common to many services described in Section 4.0.

#### 7.1 DataVox Responsibilities

This section lists DataVox responsibilities per this SOW.

- Participate in the project meetings including, but not limited to kickoff, design, and close out.
- Review physical requirements with the Customer (for example, power, space, cooling, and network).
- Receive, inventory, stage, and preconfigure equipment at DataVox prior to deployment.

#### 7.2 Customer Responsibilities

This section lists the Customer responsibilities per this SOW.

- Participate in the project meetings including, but not limited to kickoff, design, and close out.
- Provide all POE switches.

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- These are being provided via DataVox Network Scope
- Provide an approved router/firewall appliance.
- Provide all cabling, patch cords, racks, cabinets, and battery backups.
- Provide access to the network and available Customer documentation to facilitate the project objectives.
- Provide access to the Customers technical team to collect information and answer questions about the current configuration and to define any business requirements that will impact the configuration of the new equipment within this SOW.
- Provide any existing IP addressing and configuration standards used in the network.
- Provide adequate space, power and cooling based on the recommendations of DataVox.
- Provide space for receipt of project equipment at installation sites.
- Security of project equipment after it is delivered to the customer's site.
- Any necessary asset tagging.
- Move furniture, if required to install equipment.
- Provide adequate workspace for the DataVox project team while they are onsite at the Customer's facility.
- Allow unrestricted access to DataVox personnel to equipment included in the Bill of Materials as required to configure and troubleshoot until the Customer takes ownership of the systems.
- Allow appropriate remote access to equipment listed in the Bill of Materials until the Customer takes ownership of the systems. The remote access methods must allow connectivity for all necessary protocols and ports needed for DataVox to program and troubleshoot remotely.

## 7.3 Problems with the Customer's Legacy Equipment

Problems that are due to the customer's legacy equipment are the Customer's sole responsibility. If the issue must be resolved by DataVox, any labor and/or materials will be billable unless otherwise stated by DataVox.

## 7.4 Customer's Existing Network Environment

DataVox assumes no responsibility for the configuration of the Customer's existing wired or wireless network environments. DataVox will provide network design recommendations consistent with those used to configure the network devices listed in the Bill of Materials for this SOW. It is the Customer's responsibilities to configure existing network devices using the provided design recommendations.

**IMPORTANT:** DataVox will provide a Network Assessment (Line Test) prior to implementation of the new cloud solution to ensure that Customer's network is suitable to support cloud voice services. Any recommendations resulting from this Assessment, must be implemented by Customer prior to cutover of the new solution. If Customer is unwilling or otherwise refuses to update the data circuit, router, switch or



other faulty component responsible for the failure, any troubleshooting by DataVox shall be subjected to "best effort" and shall be billable. Furthermore, DataVox also reserves the right to terminate this Agreement, and any termination pursuant to this Section 6.4 shall not relieve Customer of any payments or obligations due to any third-party leasing company.

DataVox professional services may be available to assist with any recommended changes to the customer network. These services are considered billable and outside this scope of work.

#### 7.4.1 Voice Quality Issues

DataVox assumes no responsibility for any voice quality issues, including but not limited to call quality issues and/or phone issues as they relate to the cloud services (i.e., rebooting or reregistering phones).

## 8.0 Completion Criteria

Per scope of work, the services will be considered complete when:

- In-scope services detailed in Section 4.0 are completed.
- The system testing is completed.

**NOTE:** Customer signature on Delivery & Acceptance document cannot be delayed due to number porting or customer issues out of DataVox's control.

## 9.0Term and Payment

Cost Summary	One-Time	Monthly 60 Month Term
Unified Communication Services	\$9.00	\$1,358.33
Equipment - IP Phones	\$6,735.00	
DVXQ25445-01	\$200.67 Shipping	
Installation	\$4,100	
Surcharges & Fees*		\$295.02
Taxes*	n/a	\$195.74
TOTAL	\$11,044.67	\$1,849.09

\*These are estimated taxes and fees. Actual taxes and fees will be billed

The stated total monthly payment listed above is the minimum price that Customer is obligated to pay under this Agreement. The Customer acknowledges and agrees that the monthly price is subject to an increase in subsequent months based on the number of users in the system. In the event Customer removes any users, it shall, at a minimum, be responsible for the monthly price stated herein.

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## 9.1 Taxes

To comply with current tax codes, DataVox will collect sales tax on the value of hardware, even when it is provided free, or with a rebate. This sales tax will be charged on your first bill.

## 9.2 Additional Fees

The following fees shall be billed to Customer as applicable:

Local Number port (per number) *1	\$3.00
Toll Free Number Port (per number)	\$10.00
Directory Listing Setup (per number)	\$15.00
Monthly cost of unused ported numbers	\$1.50ea

\*1 Not all phone numbers are portable.

#### Additional Considerations

- The first monthly payment and implementation fee is due in advance.
- The Monthly Cloud Service Payment (portion of Total Monthly payment invoiced by DataVox) shall be billed beginning upon completion of the virtual phone system service activation.
- Your first bill may look different than other bills. It may include: (1) one-time fees and prorated charges for new services added during the prior month, (2) full charges for the next month, (3) applicable usage charges, as well as (4) associated taxes and fees.
- The monthly payment cost excludes:
  - Shipping for any ordered phones.
  - Sales tax.
  - Carrier/SIP provider fees and surcharges, federal and state telecommunications taxes, and other regulatory fees.
  - o Toll-free calls (per minute charges will apply).
  - o International per call per minute charges.

These charges will be assessed monthly and applied to your monthly invoice as applicable.

Customer Initials

#### 9.3 Billing Disputes

In the event Customer disputes charge(s) billed to Customer's account, Customer shall notify DataVox in writing of such dispute within thirty (30) days of the date the disputed charge appears on Customer's account. The existence of a dispute will not relieve Customer of any amounts billed hereunder. Customer

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agrees and acknowledges that any dispute not provided in writing as required in this Section is hereby waived.

## 10.0 Termination

DataVox is committed to resolving any issues that Customer is experiencing with the overall performance of the Elevate cloud-based unified communications solution.

If after the first year of service and support, DataVox fails to resolve an ongoing severe service issue after being afforded the opportunity to cure said issue within thirty (30) days, Customer may provide written notice of its intent to terminate this Agreement, and this Agreement will be terminated on the sixtieth (60<sup>th</sup>) day from when notice is received.

In addition to the ability to terminate this Agreement under Section 9.0, DataVox also reserves the right to terminate this Agreement with the Customer for convenience with fifteen (15) days' written notice.

If mutually agreed upon, both parties may terminate this Agreement for convenience at any time during the term of this Agreement.

This Termination Section is only applicable to the Monthly Cloud Service Payment billed directly by DataVox, and all other agreements entered into by Customer, including but not limited to, lease agreements, shall remain in full force and effect.

## **11.0 Terms and Conditions**

Customer acknowledges and agrees to the terms and conditions set forth in the *DataVox Standard Terms* and *Conditions*, *End User MSA*, *Service Level Agreement*, *Product Schedule*, and *Emergency 911 (E911) Notification Sheet*.

https://www.datavox.net/terms-and-conditions/

To the extent that any of the terms and conditions conflict with any provisions found within this Agreement, the provision contained within this Agreement shall control.

	Customer initials	required
1		

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## 12.0 Notices

All notices required to be sent or given under this Agreement shall be sent in writing and shall be deemed duly given and effective (i) immediately, if delivered in person; (ii) the next business day, if delivered via electronic mail; (iii) if sent by registered mail, return receipt requested or first class postage prepaid, two (2) business days after deposit in the mail; or (iv) if sent by internationally recognized overnight delivery service, one (1) business day after delivery to a recognized overnight delivery service. In each case, notice must be addressed to the party entitled to receive the same at the address specified below:

#### If to Customer, then to:

Customer Name:	-
Attention:	_
Address:	
 Telephone:	_
Email:	
If to DataVox, then to:	
DataVox, Inc.	
Attention: David Wilson, Vice President of Manage	d Services
6650 W. Sam Houston Parkway S.	
Houston, Texas 77072	
Telephone: 713-881-7141	
With a copy to:	
Legal Department – DataVox	
Attention: Anuja Deshpande, General Counsel	
6650 W. Sam Houston Parkway S.	

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Houston, Texas 77072

Telephone: 713-881-7090

Email: legalnotices@datavox.net

## **13.0 Limitation of Liability**

IN NO EVENT SHALL DATAVOX OR ANY OF ITS REPRESENTATIVES BE LIABLE UNDER THIS AGREEMENT TO CUSTOMER OR ANY THIRD PARTY FOR SPECIAL, INDIRECT, INCIDENTAL, EXEMPLARY, PUNITIVE, ENHANCED, OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOST PROFITS, LOST REVENUES, LOSS OF USE OF THE EQUIPMENT OR ANY ASSOCIATED EQUIPMENT, LOSS OF DATA, COST OF CAPITAL, COST OF SUBSTITUTE EQUIPMENT, COST OF FACILITIES, DOWNTIME COSTS, CLAIMS OF CUSTOMERS OF CUSTOMER FOR SUCH DAMAGES, OR DIMINUTION OF VALUE, ARISING OUT OF, OR RELATING TO, AND/OR IN CONNECTION WITH ANY ACTUAL EFFORT SERVICES OR BEST EFFORT SERVICES PROVIDED UNDER THIS AGREEMENT, OR ANY CYBERSECURITY BREACHES (INCLUDING ANY BREACH UNINTENTIONALLY PASSED ON TO CUSTOMER BY DATAVOX), REGARDLESS OF (A) WHETHER SUCH DAMAGES WERE FORESEEABLE; (B) CUSTOMER WAS ADVISED OF THE POSSIBILITY OF SUCH DAMAGES AND (B) THE LEGAL OR EQUITABLE THEORY (CONTRACT, TORT, OR OTHERWISE) UPON WHICH THE CLAIM IS BASED.

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 Quote #
 DVXQ26516-02

 Date
 Jun 2, 2023

 Expiration
 30 Days

#### **Prepared for:**

City of Iowa Colony 12003 Iowa Colony Iowa Colony, TX 77583

Robert Hemminger Email rhemminger@iowacolonytx.gov Phone 281-369-2471

Customer ID #

Project #

#### Ship to Information:

**City of Iowa Colony** 12003 Iowa Colony Iowa Colony, TX 77583

attn: Robert Hemminger

DataVox Contact:

Account Manager: Dana Landry Phone 713-881-7180

Email danal@datavox.net

Prepared by: Kyle Sandoval Phone 7138817037 Email kyles@datavox.net

#### Qty Description

Service Term

- Cohesity Data Protection Solution with 24TB Usable, 8TB Data Protect and 20TB Fort Knox
  - 1 C5016-SFP THREE (3) NODE BLOCK WITH 36 TB SECURE ERASE HDD, 4.8 TB PCI-E FLASH, 192 GB RAM, 12X 10GBE SFP+ PCIE, 3X IPMI; HARDWARE O NLY
  - 1 PREMIUM (24X7) SUPPORT FOR C5016-10G-SFP-3-INFO; SUBJECT TO THE COHESITY SUPPORT MAINTENANCE TERMS AND CONDITIONS.
  - 6 CABLE, 10G, SFP+, TWINAX, 3M
  - 8 COHESITY DATAPROTECT SERVICE SUBSCRIPTION (1 TB). BACKUP AND RECOVERY ACROSS ON-PREM AND CLOUD WORKLOADS. SUBSCRIPTION PER TB OF USABLE STORAGE CAPACITY.

#### Cohesity Fort Knox 20TB Next-Generation AirGap

20 COHESITY FORTKNOX DELIVERED AS A SERVICE ON AWS DATA PLANE. PROVIDES A SECURE SERVICE FOR CUSTOMERS TO VAULT THEIR DATA INTO COHESITY-MANAGED HOT TIER STORAGE IN THE CLOUD. PROVIDES DATA ISOLATION, ANOMALY DETECTION, AND FLEXIBLE REC..

#### Cohesity Office 365 Protection for 30 mailboxes

30 COHESITY M365 DELIVERED AS A SERVICE (1 USER) ON AWS DATA PLANE. BACKUP AND RECOVERY OF M365 WORKLOAD. UNLIMITED RETENTION. SUBSCRIPTION PER USER. MUST BE PURCHASED IN INCREMENTS OF 10 USERS. <BR>USER BAND: SM = UP TO 1K; MD = 1001-5.,

#### Cohesity Virtual Training for One Student and One Day.

1 ONE (1) STUDENT SEAT FOR ONE (1) DAY OF INSTRUCTION IN AN INSTRUCTOR-LED VIRTUAL ONLINE WEBINAR CLASS OR INTERACTIVE ECOURSE. CONTACT ACADEMY@COHESITY.COM FOR A SCHEDULE OF COURSE OFFERINGS. EXPIRES 365 DAYS FROM PO.

**DataVox Professional Services** 

1 Standard ground shipping estimate. The customer will be billed for actual shipping charges if they are greater than the estimate provided.

The DataVox Standard Terms and Conditions shall govern the execution of this quotation. http://www.datavox.net/DataVox\_Standard\_Terms\_and\_Conditions.pdf

This document is confidential and the property of DataVox. Any copy or reuse of this document, its contents, recommendations and/or solutions in whole or part is strict prohibited without prior written consent of DataVox. All returns are subject to the DataVox equipment return policy.

Qty	Description	······································	Servic	Item 12.
		SubTotal Tax	\$76	,608.27 \$0.00
		Total	\$76,6	08.27

## **Purchase Options**

[ ] Terms Purchase (purchase amount \$76,608.27)

The DataVox Standard Terms and Conditions shall govern the execution of this quotation, http://www.datavox.net/DataVox\_Standard\_Terms\_and\_Conditions.pdf

#### **Purchase Notes**

A 15% restocking fee will be applied to all returned equipment. Custom built designs and configurations may not be returnable. Software licensing is not returnable.



#### **Prepared for:**

City of Iowa Colony 12003 Iowa Colony Iowa Colony, TX 77583

Robert Hemminger Email rhemminger@iowacolonytx.gov Phone 281-369-2471

Customer ID # Project #

#### Qty Description

- 1 HPE NS dHCI w/ Alletra 5000 BC Trk
- 3 HPE DL325 G10+ v2 8SFF CTO Svr
- 3 AMD EPYC 7313P CPU for HPE
- 12 HPE 32GB 2Rx4 PC4-3200AA-R Smart Kit
- 3 HPE NS204i-p Gen10+ Boot Ctrlr
- 3 BCM 57414 10/25GbE 2p SFP28 Adptr
- 3 BCM 57414 10/25GbE 2p SFP28 OCP3 Adptr
- 3 HPE DL325 G10+ v2 Stnd FIO Fan Kit
- 6 HPE 500W FS Plat Ht Plg LH Pwr Sply Kit
- 6 HPE Pwr Crd 1.83m 10A C13 Th-Ph Kit
- 3 HPE ILO Adv 1-svr Lic 3yr Support
- 3 HPE Bezel Lock Kit
- 3 HPE DL325 Gen10+ Bezel Kit
- 3 HPE DL300 G10+ 1U SFF Easy Inst Rail Kit
- 3 HPE DL300 Gen10+ 1U CMA for Rail Kit
- 3 HPE DL325 G10+ v2 High Perf FIO HS Kit
- 3 HPE NS dHCI w/Add Cust ESXi 8.0 FIO SW
- 3 MS WS22 16C DC ROK AMS SW
- 2 HPE SN2010M 18SFP28 4QSFP28 P2C Swch
- 3 HPE Proliant DL325 Gen10 Plus V2 Support
- 2 HPE SN2010M 25GbE Switch Support
- 1 HPE Nimble Storage dHCI Base Deploy SVC
- 1 HPE Installation Comm Svrs Hourly SVC

Ship to Information:

#### **City of Iowa Colony**

12003 Iowa Colony Iowa Colony, TX 77583

attn: Robert Hemminger

 Quote #
 DVXQ26516-03

 Date
 Jun 29, 2023

 Expiration
 30 Days

#### **DataVox Contact:**

Account Manager: Dana Landry Phone 713-881-7180

Email danal@datavox.net

Prepared by: Sloane Fern Phone 713-881-7026 Email sloanem@datavox.net

Service Term

36 Months 36 Months

The DataVox Standard Terms and Conditions shall govern the execution of this quotation. http://www.datavox.net/DataVox\_Standard\_Terms\_and\_Conditions.pdf

Qty	Description	Servic	Item 12.
1	HPE NS dHCI w/ Alletra 5030 CTO Array		
1	HPE NS 2x10GbE 2p FIO Adptr Kit		
2	HPE Alletra 5000 2.88TB FIO Cache Bdl		
2	HPE NS NEMA 5-15 to C13 US FIO Pwr Cord		
1	HPE Alletra 5000 42TB SAS FIO HDD Bdl		
1	HPE Alletra Tier 1 Storage Array Std Trk		
1	HPE NS dHCI NOS PG ESXI 8.0 FIO SW		
1	HPE Alletra 5030 SW/Sup 3yr SaaS		
1	HPE NS 2x10GbE 2p Adptr Supp	36 M	onths
1	HPE Alletra 5030 CTO Base Array Supp	36 M	onths
1	HPE Alletra 5000 42TB SAS HDD Bdl Supp	36 M	onths
2	HPE Alletra 5000 2.88TB FIO CachBdl Supp	36 M	onths
1	HPE SN2100M Rack Installation Kit		
1	VMw vCenter Server Std for vSph 3y E-LTU		

2 VMw vSphere EntPlus 1P 3yr E-LTU

> Miscellaneous budget for items such as cabling and connectors (actual to be billed). For miscellanous items that are within this budgeted amount, no change notice will be required. Should miscallenous items be required beyond this budgetary amount, a project change notice will be provided for customer approval.

Standard ground shipping estimate. The customer will be billed for actual shipping charges if 1 they are greater than the estimate provided.

SubTotal	\$125,577.28
Тах	\$0.00
Total	\$125,577.28

## **Purchase Options**

[] Terms Purchase (purchase amount \$125,577.28)

127

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## **Purchase Notes**

A 15% restocking fee will be applied to all returned equipment. Custom built designs and configurations may not be returnable. Software licensing is not returnable.

128



Item 12.

\$0.00

\$2,000.00

Quote #DVXQ26976DateJul 12, 2023Expiration30 Days

City of Iowa Colony 12003 Iowa Colony Iowa Colony, TX 77583 Robert Hemminger Email rhemminger@iowacolonytx.gov Phone 281-369-2471

Customer ID # Project #

**Prepared for:** 

Ship to Information: City of Iowa Colony 12003 Iowa Colony Iowa Colony, TX 77583

attn: Robert Hemminger

Here is the quote you requested.

**DataVox Contact:** 

Account Manager: Dana Landry Phone 713-881-7180

Email danal@datavox.net

Prepared by: Dana Landry Phone 713-881-7180 Email danal@datavox.net

Tax

Total

## **Data Migration - Professional Services**

Qty	Description		Service Term
	DataVox Professional Services		
		SubTotal	\$2,000.00

## **Purchase Options**

[ ] Terms Purchase (purchase amount \$2,000.00)

The DataVox Standard Terms and Conditions shall govern the execution of this quotation. http://www.datavox.net/DataVox\_Standard\_Terms\_and\_Conditions.pdf

#### **Purchase Notes**

A 15% restocking fee will be applied to all returned equipment. Custom built designs and configurations may not be returnable. Software licensing is not returnable.

#### **Acceptance of Proposal**

When (but only when) signed by Customer shall this be a binding, legal contract. The prices, specifications, and conditions in this quote are satisfactory and are hereby accepted in their entirety. Customer hereby agrees to purchase the equipment and, if applicable, authorizes DataVox to perform the work and provide the materials specified, and payment will be made as outlined above. Any changes in the equipment or installation may result in a change in the price.

THIS QUOTE, WHEN SIGNED BY CUSTOMER SHALL BE GOVERNED BY THE TERMS AND CONDITIONS FOUND AT <a href="http://www.datavox.net/DataVox\_Standard\_Terms\_and\_Conditions.pdf">http://www.datavox.net/DataVox\_Standard\_Terms\_and\_Conditions.pdf</a>. THERE ARE NO OTHER AGREEMENTS OR WARRANTIES, ORAL OR WRITTEN, EXCEPT AS EXPRESSLY STATED IN THIS DOCUMENT. THIS AGREEMENT CANNOT BE MODIFIED EXCEPT IN WRITTING SIGNED BY BOTH PARTIES. Customer acknowledges having read and understood all of the terms and conditions printed herein as well as those found in the online document and acknowledges receipt of a complete executed copy of this quote.

(Printed Name)

(Signature)

(Date)

This document is confidential and the property of DataVox. Any copy or reuse of this document, its contents, recommendations and/or solutions in whole or part is stric prohibited without prior written consent of DataVox. All returns are subject to the DataVox equipment return policy.



July 3, 2023

Mayor Wil Kennedy c/o City Council City of Iowa Colony 12003 Iowa Colony Blvd. Iowa Colony, TX 77553

#### Re: Caldwell Lakes – General Plan Variance Requests to Subdivision Ordinance – Lot Access Letter of Recommendation Adico, LLC Project No. 16007-3-433

Dear Mayor Kennedy and City Council;

On behalf of the City of Iowa Colony, Adico, LLC has reviewed the Application for Variances to the Subdivision Ordinance for the Caldwell Lakes General Plan as submitted by LJA Engineering, Inc.

#### **Description:**

The developer is seeking a variance for the allowance to exceed the maximum local lot allowance (35 lots) for access points for the Caldwell Lakes subdivision.

#### Subdivision Ordinance Reference:

Per Section 33. Multiple Access Points: D. All subdivisions except single dead-end streets shall have a minimum of two access points to existing proposed public streets. This may be a boulevard where a second access is not available.

#### **Recommendations:**

Staff is recommending approval of the variance to exceed the maximum local lot allowance per access points subject to the developer providing a secondary all weather emergency access road along Bullard Parkway as depicted on the General Plan. In addition, no lots north of Bullard Parkway will be allowed to be constructed until Bullard Parkway is complete.

This requirement satisfies temporary connectivity and emergency access until Bullard Parkway is constructed.

Developer has provided a interim secondary access point along Bullard Parkway connection to Karsten Blvd. As such, we are recommending approving the variance application for Caldwell Lakes.

Should you have any questions, please do not hesitate to call our office.

Sincerely, Adino\_LLC Dinh V. Ho, P.E.

TBPE Firm No. 16423

Cc: Kayleen Rosser, COIC Robert Hemminger, COIC File: 16007-3-433





**APPLICATION FOR VARIANCE REQUEST or APPEAL** 

12003 IOWA COLONY BLVD., IOWA COLONY, TEXAS 77583 | PHONE: 281-369-2471 | FAX: 281-369-0005 | WWW.CITYOFIOWACOLONY.COM

Please use this application to request a variance/appeal within the Subdivision Ordinance, Zoning Ordinance, Unified Development Code (UDC) and Sign Ordinance. An Application for Variance Request/Appeal shall be considered by Planning Commission and Planning Commission shall make a recommendation to City Council, who has the authority to grant or deny variance requests. Considerations are made at the monthly Planning Commission and City Council meetings. Refer to the <u>www.cityofiowacolony.com</u> for Planning Commission and City Council scheduled meeting dates and all ordinances and development guidelines affecting the City. Provide hard copies and digital files (cd or flash drive) of application and any supporting documentation to the City Secretary. This application may be used for several requests but only one property or one section of a subdivision. The application fee for Variance Requests/Appeal is \$1,000, due at the time of submission and is non-refundable. Applications received without the required fee shall be considered incomplete.

#### TYPE OF VARIANCE REQUEST (SELECT ONE): [] ZONING [] UDC [] ZONING ORDINANCE [] SIGN ORDINANCE [] APPEAL

#### **APPLICANT INFORMATION:**

Name of Applicant:	Abigail Martinez / LJA Engineering, Inc.		
Address of Applicant:	3600 W Sam Houston Pkwy, Ste. 600	Phone: 713-657-6008	
	Houston, TX 77042	Email: amartinez@lja.com	
Name of Owner:	Daniel Rose / D.R. Horton		
Address of Owner:	6744 Horton Vista Dr.	Phone: 281-566-2100	
	Richmond, TX 77407	Email: drose@drhorton.com	
PROPERTY INFORMA	ATION:		
Address Of Subject Pro	operty: Generally located 1 mi west of SH 2	288 along Cedar Rapids Pkwy	
Legal Description Of S	ubject Property:H.T. & B.R.R. Co Lot 68, A-56	61 and H.T. & B.R.R. Co Lot 58, A-516	
Brazoria County Tax N	o(s): 0516-0002-105, 0516-0006-000, 056	<u>1-0015-000, 0561-0011-000, 0561-0006-000, 0561-000</u> 5-135	
Current Zoning: Res	sidential Single Family	Water and Sanitary Serviced by: <u>City</u>	
Street Frontage Type (	Circle One): Private or Public	FIRM Map Panel Number: 48039C0105K, Eff. Date 12/30/20	
Unified Development C List Ordinance or C Request and rea	Code or Sign Ordinance that the Variance Request appli-         Code:       Subdivision Ordinance, Section 36. Bl         Ason:       Please see the attached Variance Re	es to. If additional space is needed, please attach to this application. locks, Subsection D. quest Information Form.	
List Ordinance or C	ode: Subdivision Ordinance, Section 33. Streets	s, Subsection E.	
Request and rea	ason: Please see the attached Variance Reques	t Information Form.	
List of supplemental do	cumentation provided:		
Planning Commission I	Date Requested: July 11, 2023	City Council Date Requested: July 17, 2023	
Requestor Signature of	Owner and Date: Migail Martinez	6/7/23	
FOR CITY USE ONLY	: Application Received By:	Date Received:	
Planning Commission	Date:	Fee Received:	
City Council Date:		Notifications Required: [] Published Notice [] Public Hearing	

Date Approved or Denied: \_

Doctina /	on Property	(annlicant	rocnoncibility	[] Deregnal Notice
r usung i		lappiicant	i coporioininty j	

[] Written Notice of Decision

## **Variance Request Information Form**

Plat Name:	-	Caldwell Lakes GP
Company Name:	-	LJA Engineering, Inc.
Date Submitted:	-	June 7, 2023

#### Specific variance is being sought and extent of variance:

To exceed the maximum local lot allowance per access points requirement for the Caldwell Lakes subdivision to allow lot development north of the intersection to the south right-of-way line of Bullard Parkway, given temporary emergency access to Bullard Parkway is provided while the connection to Sterling Lakes is constructed.

#### Subdivision Ordinance Reference:

Section 33. E. Multiple Access Points: All subdivisions except single dead-end streets shall have a minimum of two access points to existing proposed public streets. This may be a boulevard where a second access is not available.

#### **Statement of Facts:**

(1) The imposition of the terms, rules, conditions, policies and standards of this division would deprive the owner or applicant of the property of reasonable use of the land or building;

Caldwell Lakes is an approximately 386.3-acre residential community located west of SH 288, east of FM 521 Road, north of Cedar Rapids Parkway, and south of Alloy Road. The community includes several internal streets that traverse the development. The site is bounded on all sides by undeveloped acreage and some single-family residential homes to the west and Brazoria County MUD Site #31 to the east.

The project site is located along Cedar Rapids Parkway, about one mile west of SH 288. There are currently two points of access off Cedar Rapids Parkway, which would permit development of 150 lots up to the intersection approximately 1,500 feet north of Cedar Rapids Parkway, adjacent to the proposed Recreation Center. Please refer to the Lot Access Variance Exhibit. Due to the presence of Bayou Rifles Gun Range and the Safety Danger Zone (SDZ) not allowing the connection of Bullard Parkway to the west, the development of lots past that point is hindered due to lack of dedicated right-of-way (ROW) at the time of construction.

The conditions and standards of this division would deprive the development due to the existence of the SDZ. However, the requested variance, if approved, would maintain the chapter's standards. A variance is needed to exceed the 35 lots per one point of access and also to provide the opportunity for construction to the south side of the Bullard right-of-way with the provision that emergency access is provided until a permanent connection is made to Bullard Parkway and where it connects to the Sterling Lakes development to the east.

## (2) The circumstances supporting the granting of the variance are not the result of a hardship imposed or created by the applicant, and the general purposes of this division are observed and maintained;

The existing conditions of the surrounding property, including the gun range, is not a hardship created or imposed by the applicant. The general purposes of this section within the Iowa Colony ordinances will continue to be observed and maintained as temporary emergency access would be provided to any lots under construction as Bullard Parkway is being constructed to the east.

#### (3) The intent of this article is preserved; and

The overall circulation and access of the area is upheld by the proposed street system and phasing of road construction. The construction of Bullard Parkway would begin five months prior to pulling permits for the development of lots exceeding 150 lots. These lots would be provided temporary emergency access north to Bullard Parkway to ensure the intent and general purposes of this article is preserved.

(4) The granting of such a variance will not be injurious to the public health, safety, or welfare.

The granting of the variance will not impede adequate circulation within the development and will therefore not be injurious to the public health, safety, or welfare. The variance will further improve public health, safety, and welfare, as homes and residents who drive through the area will be protected from the Safety Danger Zone. Safe emergency access and regulations as sufficient connectivity and access throughout the site will remain. The number of lots beyond 150 up to the southern ROW of Bullard Parkway will be provided with temporary emergency access to continue protecting public health, safety, and welfare.







#### OUT OF THE

H.T. & B.R.R. CO. SURVEY, LOT 58, A-516 H.T. & B.R.R. CO. SURVEY, LOT 68, A-561 CITY OF IOWA COLONY, BRAZORIA COUNTY, TEXAS

OWNER:

**D.R. HORTON** 



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This exhibit is an illustrative representation for presentation purposes only and should not be used for computation or construction purposes. The information provided within should be considered a graphic representation to aid in determining plan components and relationships and is subject to change without notice. All property boundaries, easements, road alignments, drainage, floodplains, environmental issues and other information shown is approximate and should not be relied upon for any purpose. No warranties, express or implied, concerning the actual design, accuracy, location, and character of the facilities shown on this exhibit are intended.



July 3, 2023

Mayor Wil Kennedy c/o City Council City of Iowa Colony 12003 Iowa Colony Blvd. Iowa Colony, TX 77553

#### Re: Caldwell Lakes – General Plan Variance Requests to Subdivision Ordinance Letter of Recommendation Adico, LLC Project No. 16007-3-433

Dear Mayor Kennedy and City Council;

On behalf of the City of Iowa Colony, Adico, LLC has reviewed the Application for Variances to the Subdivision Ordinance for the Caldwell Lakes General Plan as submitted by LJA Engineering, Inc.

#### **Description:**

The developer is seeking a variance for the allowance to exceed the maximum local block length requirement on the western boundary of the Caldwell Lakes subdivision.

#### Subdivision Ordinance Reference:

Per Section 36. Blocks: D. No block shall exceed a length of one thousand two hundred (1,200) feet in residential or commercial developments.

#### **Recommendations:**

Staff is recommending approval of the variance to block length requirements along the western boundary of the Caldwell Lakes development as illustrated in the general plan.

The existing Bayou Gun Range extends north from Cedar Rapids approximately one mile (west of the development), creating a safety danger zone in this corridor. Requiring an east west collector would possibly create public safety issues.

Developer has provided a secondary east-west stub out just north of Cedar Rapids in addition to future extension of Bullard Parkway. As such, we are recommending approving the variance application for Caldwell Lakes.

Should you have any questions, please do not hesitate to call our office.

Sincerely, Adico, LLC TBPE Firm No. 16423

Cc: Kayleen Rosser, COIC Robert Hemminger, COIC File: 16007-3-433





**APPLICATION FOR VARIANCE REQUEST or APPEAL** 

12003 IOWA COLONY BLVD., IOWA COLONY, TEXAS 77583 | PHONE: 281-369-2471 | FAX: 281-369-0005 | WWW.CITYOFIOWACOLONY.COM

Please use this application to request a variance/appeal within the Subdivision Ordinance, Zoning Ordinance, Unified Development Code (UDC) and Sign Ordinance. An Application for Variance Request/Appeal shall be considered by Planning Commission and Planning Commission shall make a recommendation to City Council, who has the authority to grant or deny variance requests. Considerations are made at the monthly Planning Commission and City Council meetings. Refer to the <u>www.cityofiowacolony.com</u> for Planning Commission and City Council scheduled meeting dates and all ordinances and development guidelines affecting the City. Provide hard copies and digital files (cd or flash drive) of application and any supporting documentation to the City Secretary. This application may be used for several requests but only one property or one section of a subdivision. The application fee for Variance Requests/Appeal is \$1,000, due at the time of submission and is non-refundable. Applications received without the required fee shall be considered incomplete.

#### TYPE OF VARIANCE REQUEST (SELECT ONE): [] ZONING [] UDC [] ZONING ORDINANCE [] SIGN ORDINANCE [] APPEAL

#### **APPLICANT INFORMATION:**

Date Approved or Denied:

Name of Applicant:	Abigail Martinez / LJA Engineering, Inc.		
Address of Applicant:	3600 W Sam Houston Pkwy, Ste. 600	Phone: 713-657-6008	
· · · · · · · · · · · · · · · · · · ·	Houston, TX 77042	<sub>Email:</sub> amartinez@lja.com	
Name of Owner:	Daniel Rose / D.R. Horton		
Address of Owner:	6744 Horton Vista Dr.	Phone: 281-566-2100	
	Richmond, TX 77407	Email: drose@drhorton.com	
PROPERTY INFORMA	ATION:		
Address Of Subject Pro	operty: <u>Generally located 1 mi west of SH 28</u>	8 along Cedar Rapids Pkwy	
Legal Description Of Su	ubject Property:H.T. & B.R.R. Co Lot 68, A-561	and H.T. & B.R.R. Co Lot 58, A-516	
Brazoria County Tax N	o(s): 0516-0002-105, 0516-0006-000, 0561-	<u>0015-000, 0561-0011-000, 0561-0006-000, 0561-000</u> 5-135	
Current Zoning: Res	sidential Single Family	Water and Sanitary Serviced by: <u>City</u>	
Street Frontage Type (	Circle One): Private or Public	FIRM Map Panel Number: 48039C0105K, Eff. Date 12/30/20	
Unified Development C List Ordinance or C Request and rea List Ordinance or C Request and rea	Code or Sign Ordinance that the Variance Request applies         Code:       Subdivision Ordinance, Section 36. Block         Code:       Please see the attached Variance Request         Subdivision Ordinance, Section 33. Streets,         Subdivision Ordinance, Section 33. Streets,         Please see the attached Variance Request I	to. If additional space is needed, please attach to this application. cks, Subsection D. uest Information Form. Subsection E. Information Form.	
List of supplemental do	cumentation provided:		
Planning Commission I	Date Requested: July 11, 2023	City Council Date Requested: July 17, 2023	
Requestor Signature or	Owner and Date: Migarl Martinez	6/7/23	
FOR CITY USE ONLY	Application Received By:	Date Received:	
Planning Commission	Date:	Fee Received:	
City Council Date:		Notifications Required: [] Published Notice [] Public Hearing	

[] Posting on Property (applicant responsibility) [] Personal Notice

[] Written Notice of Decision

## **Variance Request Information Form**

Plat Name:	-	Caldwell Lakes GP
Company Name:	-	LJA Engineering, Inc
Date Submitted:	-	June 7, 2023

#### Specific variance is being sought and extent of variance:

To exceed the maximum local block length requirement on the western boundary of the Caldwell Lakes subdivision.

#### Subdivision Ordinance Reference:

Section 36. Blocks.

D. No block shall exceed a length of one thousand two hundred (1,200) feet in residential or commercial developments.

#### **Statement of Facts:**

(1) The imposition of the terms, rules, conditions, policies and standards of this division would deprive the owner or applicant of the property of reasonable use of the land or building;

Caldwell Lakes is an approximately 386.3-acre residential community located west of SH 288, east of FM 521 Road, north of Cedar Rapids Parkway, and south of Alloy Road. The community includes several internal streets that traverse the development. The site is bounded on all sides by undeveloped acreage and some single-family residential homes to the west and Brazoria County MUD Site #31 to the east.

The project site is located along Cedar Rapids Parkway, about one mile west of SH 288. Approximately 1,000 feet to the west of the site is an existing rifle and pistol firing range, Bayou Rifles Gun Range. The western portion of the site is located directly behind the Bayou Rifles Gun Range and falls within a Safety Danger Zone, in which stray bullets and ricochets from the range can impact the land that would connect the Caldwell Lakes subdivision to the Caldwell Crossing subdivision. Due to the possibility of stray bullets from the gun range, it is not possible to connect Bullard Parkway to the west at this time. The developer, D.R. Horton, conducted a study with an authorized company to locate the Safety Danger Zone and will not locate any homes or right-of-way within this area for safety and liability purposes. This has resulted in a subdivision design with a longer block length along the western boundary of the project.

(2) The circumstances supporting the granting of the variance are not the result of a hardship imposed or created by the applicant, and the general purposes of this division are observed and maintained;

The existing conditions of the surrounding property, including the gun range, are not a hardship created or imposed by the applicant. The general purposes of this section within the Iowa Colony ordinances will continue to be observed and maintained.

#### (3) The intent of this article is preserved; and

The overall circulation of the area is upheld by the proposed street system, thereby preserving and maintaining this chapter's intent and general purposes.

#### (4) The granting of such a variance will not be injurious to the public health, safety, or welfare.

The granting of the variance will not impede adequate circulation within the development and will, therefore not be injurious to the public health, safety, or welfare. The variance will further improve public health, safety, and welfare, as homes and residents who drive through the area will be protected from the gun range's ricochet area. There will be sufficient connectivity and access throughout the site.



LEGEND

SAFETY DANGER ZONE

## A BLOCK LENGTH VARIANCE EXHIBIT FOR

# CALDWELL LAKES GENERAL PLAN

## ±386.35 ACRES

## OUT OF THE

H.T. & B.R.R. CO. SURVEY, LOT 58, A-516 H.T. & B.R.R. CO. SURVEY, LOT 68, A-561 CITY OF IOWA COLONY, BRAZORIA COUNTY, TEXAS

#### OWNER:

**D.R. HORTON** 





#### LJA# 1931-33001

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This exhibit is an illustrative representation for presentation purposes only and should not be used for computation or construction purposes. The information provided within should be considered a graphic representation to aid in determining plan components and relationships and is subject to change without notice. All property boundaries, easements, road alignments, drainage, floodplains, environmental issues and other information shown is approximate and should not be relied upon for any purpose. No warranties, express or implied, concerning the actual design, accuracy, location, and character of the facilities shown on this exhibit are intended.



Monday, July 3, 2023

Abigail Martinez LJA Engineering, Inc. 3600 W. Sam Houston Pkwy. Suite 600 Houston, TX 77042

#### Re: Caldwell Lakes General Plan Letter of Recommendation to Approve City of Iowa Colony Project No. 433 Adico, LLC Project No. 16007-03-433

Dear Ms. Martinez;

On behalf of the City of Iowa Colony, Adico, LLC has reviewed the submittal of the Caldwell Lakes General Plan, received on or about June 6, 2023. The review of the general is based on the City of Iowa Colony Subdivision Ordinance No. 2019-09 dated August 2002, and as amended.

Based upon on our review, we have no objections to the general plan subject to the approval of the Variance Requests for Block Length Requirements and Lot Access. Please provide ten (10) prints to Kayleen Rosser, City Secretary, by no later than Thursday, July 6, 2023, for consideration at the July 11, 2023, Planning and Zoning meeting.

Should you have any questions, please do not hesitate to call our office.

Sincerely, Adigo, LLC ŀ.E. TBPE Firm No. 16423

Cc: Kayleen Rosser, COIC Robert Hemminger, COIC File: 16007-3-433





BOUNDARY LINE TABLE			
LINE	BEARING	DISTANCE	
L1	N 86°49'06" E	2831'	
L2 S 02°54'25" E 2596'			

		1017
L4	S 02°46'33" E	1345'
L5	S 03°10'06" E	1320'
L6	N 86°48'25" E	1313'
L7	S 02°51'05" E	3935'
L8	S 87°21'05" W	1320'
L9	N 02°47'53" W	1319'
L10	S 87°34'02" W	41'
L11	N 02°50'05" W	1320'
L12	S 87°22'47" W	1280'
L13	N 02°55'29" W	3922'
L14	N 87°04'52" E	418'
L15	N 24°18'27" E	231'
L16	N 04°23'35" E	350'
L17	N 21°17'16" W	178'
L18	N 16°42'03" W	500'
L19	S 88°38'11" W	56'
L20	N 02°54'49" W	183'
L21	S 87°05'31" W	521'
L22	N 03°03'55" W	1209'

LOCATION OF THE PROPOSED DRY UTILITY EASEMENTS LOCATED IN THE LOTS.

#### Item 16.

#### ORDINANCE NO.

#### AN ORDINANCE OF THE CITY OF IOWA COLONY, TEXAS FOR THE PURPOSE OF REGULATING NOISE; PROVIDING OFFENSES AND PENALTIES UP TO \$500.00 PER VIOLATIONS; PROHIBITIONS OF NOISE, PROVIDING MAXIMUM SOUND LEVELS, DEFENSES, METHODS OF MEASUREMENT, PERMITS, OTHER REGULATIONS, AND RELATED PROVISIONS

# NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF IOWA COLONY, TEXAS:

#### **SECTION 1. Findings of Fact**

That the City Council of the City of Iowa Colony, Texas ("the City") hereby finds that the following facts and all other facts stated in any part of this ordinance are true:

- a. This ordinance promotes the public health, safety, and general welfare of the people of Iowa Colony.
- b. A violation of this ordinance is a public nuisance.
- c. A violation of this ordinance is a danger to public health.
- d. This ordinance is authorized by Section 217.042 of the Texas Local Government Code, the Home Rule Charter of the City, and all applicable law.

#### **SECTION 2. Definitions**

That the following words, terms and phrases, when used in this ordinance, shall have the meanings ascribed to them in this section, unless the context of their usage clearly indicates another meaning:

Daytime hours mean the hours between 7:00 a.m. on one day and 9:00 p.m. the same day.

dB(A) means the intensity of a sound expressed in decibels.

*Emergency* means any occurrence or set of circumstances involving actual or imminent physical trauma or property damage or loss that demands immediate action.

*Emergency work* means any work performed for the purpose of preventing or alleviating the physical trauma or property damage threatened or caused by an emergency, or which is otherwise necessary to restore property to a safe condition following a fire, accident, or natural disaster, or which is required to protect persons or property from exposure to danger, or which is required to restore public utilities.

*Nighttime hours* mean the hours between 9:00 p.m. on one day and 7:00 a.m. the following day.

*Person* means any individual, association, partnership, or corporation, governmental unit, or other legal entity.

*Property line* means the line along the ground surface, and its vertical extension, which separates the real property owned, leased, or occupied by one person from that owned, leased, or occupied by another person and the imaginary line which represents the legal limits of property of any person who owns, leases, or otherwise occupies an apartment, condominium, hotel or motel room, office, or any other type of occupancy.

*Public right-of-way* means any street, avenue, boulevard, highway, road, thoroughfare, sidewalk, alley, or any other property that is owned or controlled by a governmental entity.

*Residential property* means any location used for noncommercial purposes as a place of abode by any person.

Sound means any pressure variation that can be detected by the human ear.

*Sound amplifying equipment* means any machine or device for the amplification of the human voice, music, or other.

*Vibration* means an oscillatory motion of solid bodies described by displacement, velocity or acceleration.

#### **SECTION 3.** Prohibitions

(a) That it shall be unlawful for any person to make, cause, assist, or allow the making or continuance of any sound that either exceeds the maximum permitted sound levels specified in this ordinance or which otherwise unreasonably disturbs, causes material distress, injures or endangers the comfort, repose, health, peace or safety, that is offensive to the sensibilities of a reasonable and prudent person within the city limits, or to make an unreasonable noise in a public place other than a sport shooting range, as defined by Section 250.001, Local Government Code, or in or near a private residence that the person has no right to occupy; or otherwise violates this ordinance.

(b) That it shall be unlawful for any person to use or operate, or cause to be used or operated, any mechanical or electrical device, machine, apparatus or instrument to intensify, amplify, or reproduce the human voice or to produce, reproduce, intensify or amplify any sound in any building or on any premises of the city for any purpose whereby the sound therefrom is cast directly upon the public streets or places, or which is so place or operated that the sound coming therefrom can be heard on the streets or on neighboring premises to the annoyance or inconvenience of a reasonable person having normal sensibilities, and being of ordinary tastes, habits and modes of living.

(c) That in determining whether a violation of this ordinance occurs, the following may be considered:

- 1. The level, frequency or duration of the noise;
- 2. The proximity of the noise to the dwelling or business;
- 3. The nature and zoning of the area within which the noise occurs;
- 4. The time of day or night the noise occurs.

That nothing in this ordinance shall require a complaint as a condition of a violation.

(d) That any noise that by its character, intensity, or duration, whether by one of those factors or by more than one in combination, either: (1) substantially interferes with the peaceful and comfortable enjoyment of a private home, business, or property by a person of ordinary sensibilities;

or (2) otherwise violates this ordinance; is hereby declared to be a nuisance and is hereby prohibited. The following acts, among others, are declared to be examples of loud, disturbing, and unnecessary noises that shall be prima facie evidence in violation of this section and shall not require measurement or proof of a dB(A) in order to establish a violation unless the specific provision requires a maximum dB(A):

(1) *Horns or other signaling devices.* The sounding of any horn or signaling device on any automobile or other vehicle on any street or public place of the city, except as a danger warning; the creation by means of any such signaling device of any unreasonably loud or harsh sound; and the sounding of any such device for an unnecessary and unreasonable period of time.

(2) *Exhausts.* The discharge into the open air of the exhaust of any internal combustion engine, other engine, or motor vehicle except through a muffler or other device that effectively prevents loud or explosive noise from that source.

(3) *Defect in vehicle or load.* The use of any automobile or other vehicle so out of repair, loaded, modified, or used as to create loud grating, grinding, rattling, or other noise.

(4) *Noise near schools, courts, churches, or hospitals.* The creation of any excessive noise on any street adjacent to any school, church, or court while in use, or adjacent to any hospital, which unlawfully interferes with the workings of such institution, or which unreasonably disturbs or unduly annoys patients in the hospital, provided conspicuous signs are displayed in adjoining streets to indicate the presence of a school, church, hospital or court.

(5) *Pile drivers, hammers and other machinery.* The operation between the hours of 9:00 p.m. and 7:00 a.m. of any pile driver, excavator, earth moving equipment, powered hammer, derrick or other appliance or machinery that produces loud or unusual noise.

(6) Vehicular sound systems. Any radio or other device made, adapted, or used to produce or play music or other sound, which device is connected to, located in, or located on a motor vehicle, and which device is operated at a volume that causes material distress, discomfort, or injury to a person of ordinary sensibilities in the vicinity thereof. If the sound is audible at a distance of thirty (30) feet from the source or causes a person to be aware of or feel the vibration accompanying the sound at a distance of thirty (30) feet from the source, a prima facie case is established that the device is being operated at a volume that causes material distress, discomfort, or injury to a person of ordinary sensibilities.

#### **SECTION 4. Agricultural Operations**

That this ordinance does not apply to an agricultural operation to the extent the operation is protected by Texas Agriculture Code chapter 251.

#### **SECTION 5. Maximum Sound Levels**

(a) That no person shall conduct, assist, allow, or cause any activity or sound source that produces a noise that exceeds any one or more of the following decibel levels:

- (1) a decibel level of 85dB(A) during daytime hours;
- (2) a decibel level of 65 dB(A) during nighttime hours.
(b) That the dB(A) levels set forth in this section apply to the property where the sound is being received. Any sound that when measured at the property where the sound is being received exceeds the dB(A) levels set forth in this section is a violation of this ordinance.

(c) That the evidence that an activity or sound source produces a sound that exceeds the dB(A) levels specified in this section, when measured at the site where the sound is being received, if available, shall be prima facie evidence that the sound is unreasonable, is a nuisance, and violates this ordinance.

#### **SECTION 6. Defenses**

That the following defenses shall apply to any offense established in this ordinance:

(a) That the emission of the sound was for the purpose of alerting persons to the existence of an emergency, danger, or attempted crime.

(b) That the sound was produced by an authorized emergency vehicle.

(c) That the sound was produced by emergency work as herein defined.

(d) That the sound was generated:

(1) At a lawfully scheduled stadium event, and the sound was normal and customary for that type of event;

(2) By a permitted parade and spectators or participants on the parade route during that parade, and the sound was normal and customary for that type of event;

(3) By spectators or participants at a lawfully scheduled amphitheater event, and the sound was normal and customary for that type of event;

(4) By patrons and participants using cannons and gunfire during historical battle reenactments or by a pyrotechnic display for which a pyrotechnic permit was obtained, and for which the explosives were inspected by the fire marshal;

(5) By spectators or participants of any outdoor event, fun run, race, festival, fiesta, or concert that was sponsored, cosponsored, or permitted by the city, and the sound was normal and customary for that type of event; or

(6) By any other otherwise lawful activity that constitutes protected expression pursuant to the First Amendment of the United States Constitution.

(e) The sound was produced by aircraft in flight or in operation at an airport, or by railroad equipment in operation on railroad rights-of-way.

(f) The sound was produced by a type of power equipment such as a mechanically powered saw, drill, sander, router, grinder, lawn or garden tool, lawnmower, or any other similar device used between the hours of 7:00 a.m. and 9:00 p.m., and which device did not produce a sound exceeding 85 dB(A) when measured from the nearest residential property where the sound is being received, and which device was being used for the maintenance or upkeep of the property on which it was used.

(g) The sound was generated as authorized under the terms of a permit issued under section 8.

(h) The sound was produced by the operation of any air conditioning unit that did not produce a sound exceeding 65 dB(A) when measured at least 15 feet from that air conditioning unit.

(i) The sound was produced by church bells or church chimes, when used as part of a genuine religious observance or service during daytime hours, and which did not exceed five continuous minutes in duration in any one-hour period.

#### **SECTION 7. Methods of Sound Measurement**

(a) That whenever portions of this ordinance prohibit sound over a certain decibel limit, measurement of that sound shall be made with a Type 1 or Type 2 calibrated sound level meter utilizing the A-weighting seals and the slow meter response as specified by the American National Standards Institute (ANSI S1.4-1984/85A).

(b) That noise levels shall be measured in decibels and A-weighted. The unit of measurement shall be designated as dB(A). Meters shall be maintained in calibration and good working order. Calibrations shall be employed which meet ANSI SI.40-1984 prior to and immediately after every sampling of sound. Measurements recorded shall be taken so as to provide a proper representation of the sound being measured. The microphone of said meter shall be positioned so as not to create any unnatural enhancement or diminution of the measured sound. A windscreen for said microphone shall be used. Measurements shall be taken at or near the nearest property line of the property where the sound is being received.

(c) That however, regardless of any other provision, nothing in this ordinance shall require measurement or proof of a decibel level in order to establish a violation of any provision of this ordinance that is not stated in terms of a specific maximum number of decibels allowed.

#### **SECTION 8.** Permits

(a) That no person shall use or cause to be used any loudspeaker, loudspeaker system, sound amplifier, or any other machine or device that produces, reproduces, or amplifies sound outside of buildings or other enclosed structures in a manner that violates this ordinance, without first obtaining a permit to do so.

(1) Such permit may be obtained by making application to the director of the city department so designated by the city manager.

(2) Such permit requires payment of a \$20.00 fee for the administrative costs of issuing the permit.

(3) Such permit is valid for one period not to exceed 14 hours and not between the hours of 9:00 p.m. and 7:00 a.m.

(4) Such permit shall not be issued for the same location more than twice during any 30-day period.

(5) Such permit shall not authorize, allow, or otherwise permit the production, reproduction, or amplification of sound that exceeds 75 dB(A) when measured from the nearest receiving property.

(b) That the use of any loudspeaker, loudspeaker system, sound amplifier, or any other similar machine or device pursuant to a permit under this ordinance is subject to the following regulations:

(1) The only sound permitted shall be music and human speech.

(2) The volume of the sound amplified pursuant to this section shall not exceed 75 dB(A) when measured from the nearest receiving property.

(3) No equipment permitted pursuant to this section shall be operated during the hours between 9:00 p.m. and 7:00 a.m.

(c) The application for the permit under this section shall contain the following information:

(1) The date of the application and the date and hours for which the permit is requested.

(2) The name and address of the applicant.

(3) The name and address of the person who will have charge of the sound amplifying equipment at the permitted event.

(4) The purpose for which the sound equipment will be used.

(5) The address and a description of the location where the sound equipment will be used.

(6) A description of the type of sound amplifying equipment to be used.

(7) Any other information reasonably pertinent to the permit and requested by the city official administering the permit application.

(d) That if an applicant for a permit under this section is unable to pay the full amount of the permit fee pursuant to **subsection** (a) of this section, then the fee shall be reduced to that amount the applicant is able to pay, provided the applicant submits a sworn affidavit containing the following information:

(1) A statement that the applicant and the group or organization on whose behalf the applicant is making the application are unable to pay the full amount of the permit fee.

(2) A statement that the applicant and the group or organization on whose behalf the applicant is making the application have made diligent efforts to raise money to pay the permit fee.

(3) A statement of the exact amount the applicant and the group or organization, on whose behalf he is making the application are able to pay for the permit fee.

#### **SECTION 9.** Conflicts in Terms

That in the event of a conflict of terms between this ordinance and any other ordinance or other law, the more restrictive provision shall govern and control.

#### **SECTION 10. Offenses, Penalties, and Remedies**

(a) That any references in this Ordinance to "the penalty provisions of this Ordinance" or similar phrases shall refer to this section and the penalties herein.

(b) That any person who intentionally, knowingly, recklessly, or with criminal negligence violates any provision of this Ordinance shall be guilty of a misdemeanor and upon conviction shall be fined in an amount not to exceed \$500.00. Each calendar day or portion of a calendar day a violation continues, occurs, or recurs shall constitute a separate offense.

(c) That the City shall have the right to enforce this ordinance and the Codes hereby adopted by injunction and by other actions in a civil court and/or by any and all remedies from any and all sources.

(d) That all rights and remedies of the City provided in this ordinance shall be cumulative of all other rights and remedies provided herein, by other ordinances, or by any applicable law. Furthermore, the exercise of one right or remedy by the City shall not be construed as an election of remedies and shall not impair any other right or remedy of the City. The City may exercise any right or remedy herein either alone or together with any other right or remedy under this ordinance, any other ordinance, or any applicable law. Without limiting the generality of the foregoing, pursuing or receiving any civil remedy for any violation of this ordinance shall not preclude the pursuit or receipt of any criminal penalty for any violation hereof.

#### **SECTION 11. Nonwaiver**

That the failure or omission of the City, upon one or more occasions, to enforce any right, obligation, or remedy under this Ordinance or any other law concerning utilities shall never be construed as a waiver of the City's right to strictly enforce such right, obligation, or remedy, and the City may resume such strict enforcement without advance notice.

#### **SECTION 12.** Nonwaiver of Immunity

That nothing in this Ordinance or in any other law concerning utilities shall ever be construed as a full or partial waiver of governmental immunity, official immunity, or any other immunity of the City or its officers, agents, employees, or representatives.

#### **SECTION 13.** Nonliability

That neither the City, nor its officers, employees, agents, or representatives shall be liable to any person, other than the City, for any act, omission, or condition in any way concerning this ordinance or the subject matter hereof.

#### Sec. 14. Severance Clause

That if any portion, of any size, of this ordinance is for any reason invalid, then the remainder of this ordinance shall remain valid.

#### Sec. 15. Effective Date

That this ordinance shall be effective upon passage, approval, and adoption.

PASSED AND APPROVED ON FIRST READING ON JULY 17, 2023.

PASSED, APPROVED, AND ADOPTED on second and final reading on \_\_\_\_\_

#### CITY OF IOWA COLONY, TEXAS

By: WIL KENNEDY, MAYOR

**ATTEST:** 

KAYLEEN ROSSER, CITY SECRETARY

Iowa/Ordinance/Regulating Noise (July 17, 2023)



## M E M O R A N D U M

Date:	July 12, 2023
То:	Mayor Wil Kennedy
	& Councilmembers
From:	Dinh V. Ho, P.E.
RE:	Iowa Colony Engineering Design Criteria – Summary of Changes
	Staff's Summary and Recommendations
CC:	Robert Hemminger Kayleen Rosser

Below is a summary of recommended changes to be incorporated into the City of Iowa Colony Engineering Design Criteria Manual.

Chapter 3: Water Distribution System

Section 3.3.6.A – All water meters shall be installed by and inspected by the City of Iowa Colony.

Section 3.3.6.F.d. Water meters shall be Hydrus Ultrasonic Water Meter by Diehl Metering

Chapter 5: Storm Water Drainage Design

Section 5.1.1. Storm Water Drainage Design General: Updated to reflect Brazoria County Drainage Criteria Manual, adopted in May 2022.

Section 5.3.6.B. Intensity Duration Curves: - Updated IDC to reflect Atlas 14 rainfall guidance in accordance with Brazoria County Drainage Criteria Manual.

Section 5.3.6.C. Rational Method: - Updated Rational Method analysis of peak flow rate for tract less than 50 acres from 100 acres.

Section 5.3.6.J.b.(c) Calculation of Detention Storage: Detention Storage shall be not be less than 0.75 acre-ft/acre of the parent tract. This is consistent with BCDD5 Design Criteria Manual.

Chapter 10: Construction, Inspection, Approval and Acceptance of Infrastructure: - Require GIS shape files for water, sanitary sewer, drainage facilities and streets and determined by City Engineer.

Water Details Sheet 1: Revise model of meter boxes to DFW Plastics, Inc. Model no. DFW1300-12-1KT DIZ to fit approved Hydrus Ultrasonic Water Meter.

#### ORDINANCE NO.

AN ORDINANCE OF THE CITY OF IOWA COLONY, TEXAS, FOR THE PURPOSE OF AMENDING THE IOWA COLONY ENGINEERING **DESIGN CRITERIA MANUAL: REPLACING EARLIER VERSIONS OF** THE DESIGN CRITERIA MANUAL, WITH EXCEPTIONS; REQUIRING COMPLIANCE; PROVIDING FOR DENIAL OR REVOCATION OF APPROVAL AND PERMITS DUE TO NONCOMPLIANCE; PROVIDING FOR OTHER REGULATIONS AND REQUIREMENTS; PROVIDING THAT A VIOLATION IS A MISDEMEANOR PUNISHABLE BY A FINE OF UP TO \$500 PER DAY; PROVIDING FOR OTHER PENALTIES AND **REMEDIES; REPEALING PRIOR ORDINANCES ADOPTING OR** AMENDING PRIOR DESIGN **CRITERIA** MANUALS. WITH **EXCEPTIONS:** AND PROVIDING FOR **NONWAIVER** BY NONENFORCEMENT, NONWAIVER OF IMMUNITY, NONLIABILITY OF THE CITY, A SEVERANCE CLAUSE, AND AN EFFECTIVE DATE

# NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF IOWA COLONY, TEXAS:

#### 1. Adoption of Engineering Design Criteria Manual

That the attached City of Iowa Colony Engineering Design Criteria Manual (the "Engineering Design Criteria Manual" or "Design Criteria Manual") is hereby adopted and ordained, and the regulations and provisions therein stated are hereby established. Any reference in any other ordinance, policy, or other source to an engineering design criteria manual or design criteria manual of the City of Iowa Colony shall refer to the attached City of Iowa Colony Engineering Design Criteria Manual, as amended from time to time. Any reference herein to "this Ordinance" or similar terms shall also include the Engineering Design Criteria Manual hereby adopted, and that manual is a part of this ordinance.

#### 2. <u>Compliance Required</u>

That any construction, planned construction, or plans for which a permit or approval from the City of Iowa Colony is required must be done in compliance with the Design Criteria Manual, according to its terms.

#### 3. Denial or Revocation of Permits for Approval

That the failure of any plans, construction, or planned construction to comply with Design Criteria Manual shall be grounds for the City to deny or revoke any approval or permit from the City concerning such plans, construction, or planned construction.

#### 4. <u>Other Requirements</u>

a. That the attached Engineering Design Criteria Manual replaces all prior Engineering Design Criteria Manuals of the City; provided, however, that to the extent of any vested rights under a prior version of the Design Criteria Manual, that prior version shall remain in effect.

b. That otherwise, the attached Engineering Design Criteria Manual is cumulative of all requirements from any other source and shall not authorize noncompliance with any other regulation or requirement from any source.

c. That in the event of any conflict in terms, the stricter requirement shall govern and control.

#### 5. Offenses, Penalties, and Remedies

a. That any person who participates in any violation of any provision of this Ordinance shall be deemed guilty of a misdemeanor and, upon conviction, shall be fined in an amount not to exceed \$500.00. Each day or portion of a day a violation continues, occurs, or recurs shall constitute a separate offense.

b. That the City shall have the right to enforce this ordinance by injunction and by other actions in a civil court and/or by any and all remedies from any and all sources.

c. That all rights and remedies of the City provided in this ordinance shall be cumulative of all other rights and remedies provided herein, by other ordinances, or by any source.

d. That the exercise of any right or remedy by the City shall not be construed as an election of remedies and shall not impair any other right or remedy of the City. The City may exercise any right or remedy herein either alone or together with any other right or remedy under this ordinance, any other ordinance, or any applicable law. Without limiting the generality of the foregoing, pursuing or receiving any civil remedy for any violation of this ordinance shall not preclude the pursuit or receipt of any criminal penalty for any violation hereof.

#### 6. Nonwaiver by Nonenforcement

That the failure or omission of the City, upon one or more occasions, to enforce any right, obligation, or remedy under this Ordinance or any other law concerning the subject matter hereof shall never be construed as a waiver of the City's right to strictly enforce such right, obligation, or remedy, and the City may resume such strict enforcement without advance notice.

#### 7. <u>Nonwaiver of Immunity</u>

That nothing in this Ordinance shall ever be construed as a full or partial waiver of governmental immunity, official immunity, or any other immunity of the City or its officers, employees, agents, or representatives.

#### 8. <u>Nonliability of City</u>

That neither the City, nor its officers, employees, agents, or representatives shall be liable to any person, other than the City, for any act, omission, or condition in any way concerning this ordinance or the subject matter hereof.

#### 9. <u>Repeal</u>

That this ordinance repeals all prior ordinances adopting or amending any prior versions of the Design Criteria Manual, except that such prior ordinances shall remain in effect only as to prosecution and other enforcement concerning violations accruing while those ordinances were in effect.

#### 10. <u>Severance Clause</u>

That if any part of this ordinance, of whatever size, is ever declared invalid or unenforceable for any reason, the remainder of this ordinance shall remain in full force and effect.

#### 11. Effective Date

That this ordinance shall be effective immediately upon its passage and approval.

#### PASSED AND APPROVED ON JULY 17, 2023.

#### CITY OF IOWA COLONY

By:

WIL KENNEDY, MAYOR

ATTEST:

**KAYLEEN ROSSER, CITY SECRETARY** 

Iowa/Ordinance/Design Criteria Manual (07/13/23)

#### RESOLUTION NO.

#### A RESOLUTION OF THE CITY OF IOWA COLONY, TEXAS, APPROVING A CAPITAL INVESTMENTS PLAN

# NOW, THEREFORE, BE IT HEREBY RESOLVED BY THE CITY COUNCIL OF THE CITY OF IOWA COLONY, TEXAS:

**SECTION 1.** That the City Council of the City of Iowa Colony, Texas ("the City") hereby approves the attached Capital Investments Plan.

**SECTION 2.** That if any part of this resolution, of whatever size, is ever declared invalid or unenforceable for any reason, the remainder of this resolution shall remain in full force and effect.

**SECTION 3.** This resolution shall be effective from the date of its passage and adoption.

PASSED AND ADOPTED ON JULY 17, 2023.

#### **CITY OF IOWA COLONY, TEXAS**

By:\_

WILL KENNEDY, MAYOR

**ATTEST:** 

KAYLEEN ROSSER, CITY SECRETARY

Iowa/Resolution/Approving CIP 2023



## Report

## and

# **Strategic Plan**

Adopted TBD

Prepared and Facilitated By Ron Cox Consulting



### REPORT AND STRATEGIC PLAN COUNCIL/STAFF RETREAT

### **CITY OF IOWA COLONY**

Session 1 – January 12, 2023 Session 2 – January 19, 2023

#### Introduction

On January 12, 2023, and again on January 19, 2023 the Mayor, City Council (Council), and staff of the City of Iowa Colony met for a discussion of their governance model and a planning session. The purpose of this meeting was twofold.

- January 12, 2023. Review the results of the DISC Temperament Inventory that each of the Council members took, review the governance philosophy established in 2021, and review and amend as necessary the key elements of the Council's vision and mission for Iowa Colony.
- January 19, 2023. Review the 2021 strategic plan for the city with short term and long-term strategies and goals. Council briefly reviewed their work from the January 12 meeting. There were a few changes. Those are identified in red. Finally, the Council and staff worked together to identify and prepare the basics of a Capital Investment Plan.

The Mayor, Council and staff freely worked together, and their work was exemplary in all respects. Ron Cox facilitated the process.

#### Session 1 – January 12, 2023

#### Mayor and Council as a Team

To gain a better understanding of each other and provide more meaningful communication, all members of Council participated in a temperament profile assessment based on the DISC model. DISC is the acronym for an analysis of the style of behavior patterns or characteristics a person displays in both their basic style, and in their environment (or organization) style. The DISC acronym stands for Dominant, Inspiring, Supportive and Cautious. All members of the Council participated in this assessment with a prescribed instrument, and the group viewed and discussed the results. The behavioral characteristics outlined by the Mayor and Councilmembers was revealing in that each person has his own individual style of behavior that affects the group's collective dynamics. The result of the discussion was a better understanding of the dynamics of the group, including how each behaves, and why they behave the way they do, how they communicate and why they communicate the way they do. Learning about these behavioral styles does not denote good or bad behavior or actions (a reflection of character); it allows them and others to understand that actions and reactions will occur naturally and responses to those actions and reactions can be adjusted and/or responded to accordingly (that is, temperament). The group came to a better understanding of why these behaviors occur and how to respond to them. The group also came to a better understanding of their decision-making processes to work better together in the future. Exhibit 1 shows the basic DISC model graphically. Exhibit 2 shows a graph of the Basic Style of each member of the group.



Iowa Colony January 12, 2023 January 19,2023 Report and Action Plan 2023 Strategic Planning Process



# Exhibit 2

#### Governance

The Council had earlier established their governance model. The intent in these discussions was to review the model and be more specific about the overall vision and mission for the city. The Council participated in discussions about their role, together and their leadership responsibilities. The elements of a strong governance model are having and following clear vision and mission, establishing leadership and communications philosophies, and identifying the expectations of each other as Council members, and the City staff and of identifying and recognizing the expectations has staff of the Council.

The key elements of the Governance Philosophy are leadership, communication and understanding and defining expectations. These define how the team will function together. Visioning and planning are the key elements that define what the strategies and goals are for the City of Iowa Colony and what they will be to ensure the vision is ultimately attained.

#### **Governance Model**

The governance model first begins with leadership. Each member of the Council asked to provide input into how they will lead, communicate and a defining of expectations for themselves and staff. The red denotes items that were added at this session.

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The facilitator began the reviewing each of the members responses as to why they ran and serve on the Council. Their responses were as follows:

#### Mayor and Council members ran for the office ...

- To be of service.
- To be involved.
- To have an opportunity to make a difference.
- To make the right decisions for today and tomorrow.
- To assist in moving the decision-making process along more quickly.
- Was influenced by others to run.
- Realized that local government has the most influence and direct effect on citizens lives.
- To ensure a community with a culture of inclusion.
- Was asked.

The reviewed their attributes they have that will contribute to the work of the Council.

#### Mayor and Council have the following attributes ...

- Analytical.
- Relational.
- Not too shy to speak up when needed.
- Open minded to change.
- A servant's heart care about people; give to others first.
- Analytical and objective can dive into the weeds with a need to understand.
- Can get the hard work done.
- Not working solely for the accolade but do want to be appreciated.

#### The Mayor and Council of the City of Iowa Colony will lead ...

- With honesty and integrity.
- With transparency.
- By listening first.
- By being visible in the community.
- By being responsive to the needs of the community and its citizens.
- With confidentiality.
- By looking at issues globally not myopically how a decision effects all.
- With an open mind.
- By confessing your mistakes to others.
- By being fiscally responsible not wasteful; diligent, discerning.
- By setting the example

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- Hard on issues; soft on people.
- Speaking person to person on issues (not on Facebook).

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- By focusing on the good what is good for Iowa Colony
- Listen, learn, understand, and then respond.
- Providing facts and accurate information.
- Focusing on the good and pursuing the best interests of the entire city.
- By building trust.

#### The Mayor and Council of the City of Iowa Colony will communicate...

- By listening first.
- By being available.
- Treating everyone with respect.
- Conveying the message that everyone is equally important.
- Enjoying our job and having fun.
- Being genuine be yourself.
- By being cooperative with others.
- Having an attitude of agreeing to disagree, without being disagreeable.
- Speak with respect and humility.
- Listen with understanding and compassion.
- By having an open-line with everyone.

#### The Mayor and Council of the City of Iowa Colony expect the following of each other

•••

- To be amicable in all respects.
- To be open-minded and honest.
- To be cordial.
- Responsive.
- Ask why. Tell why.
- For all to participate.
- To follow procedures, decorum and protocols.
- To project the culture we expect in all circumstances.

## The Mayor and Council of the City of Iowa Colony expect the following of the staff

•••

- Do your jobs for the citizens' sake.
- Have a customer service mindset.
- Be the face of the city.
  - o Friendly.
  - o Competent
  - o Knowledgeable.

Iowa Colony January 12, 2023 January 19,2023 Report and Action Plan 2023 Strategic Planning Process

- o Efficient.
- To be trained invest in professional and continual training for all employees.
- To have the proper compensation (investment).
- To respect the Chain-of-command throughout the organization.

# The staff of the City of Iowa Colony expects the following of the Mayor and City Council (as stated by the City Council ...

- To be deliberate and fair in dealings with the staff and issues.
- To take care of the staff fair compensation, benefits and training.
- To know who they are.
- Do not take advantage of the staff.
- Be nice.
- Follow the Chain-of-command.
- Be respectful.
- Be appreciative.
- Have confidence in them.
- Do not take the staff for granted.
- Provide them the resources to do their work.

#### Vision and Mission

The Council discussed the elements vision they have for Iowa Colony. Currently, there are no Vision or Mission Statements. However, the 2020 Comprehensive Plan outlined the vision as provided by those who participated in the development of that Plan. They found that the vision provided in that document is still consistent with their collective vision. To add depth to those vision elements, the Mayor and Council prepared a list of key elements they believe are important for the City. This list will be consolidated into a series of key bullet items. From those key items, a draft Vision Statements can be developed by staff and presented to the Mayor and Council.

#### Vision Elements

These elements were discussed and are presented in no particular order of priority. It was noted that in reviewing the Vision Statement from the Comprehensive Plan, these key vision elements are consistent with and embodied in their vision for the community. At this session, the Council reviewed these key elements. They noted that those checked were key statements for a vision statement. And secondly decided the last bullet needed to be amended for clarity.

- $\checkmark$  A full-service city providing all the traditional services a city normally provides.
- The city has mixed development to meet the needs of all who live and want to live within the city. Mixed development includes a combination of single-family housing, multi-family housing, affordable housing, retail, big-box retail, and specialty shops, with a wide variety of uses and services.

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- A diversity of rural and suburban mix within the city.
- $\checkmark$  A "State of the Art" city.
- A city above the rest.
- $\checkmark$  A safe city.
- A city that invests in its youth and citizens of all ages.
- A city that works with public and private partners to improve the quality of life for its citizens.
- A city that engages the community.
- An intermodal city providing transportation opportunity for connectivity throughout. in all modes of transportation.

#### **Vision Statement**

At the first session, the Council drafted their first Vision Statement. At their second session they reviewed and revised the Statement as follows.

# The City of Iowa Colony will be an engaging, safe, full-service, state of the art city.

#### Mission Statement.

Likewise, the Mayor and City Council reviewed the Missions Statement that has been developed earlier, and agreed it was consistent with the elements they described as stated above.

The key elements for the Mission for Iowa Colony are as follows.

- Creating and providing infrastructure to the extent the city can provide its own services to citizens.
- Promoting economic development.
- Responsive to service requests.
- Displaying professionalism in all cases.
- Providing adequate staff to provide the services.
- Being fiscally responsible.

#### **Mission Statement**

The Mission of the City of Iowa Colony and its staff is to continually improve the quality of life by:

- Creating and providing infrastructure to the extent the city can provide its own services to citizens.
- Promoting economic development.
- Being responsive to service requests.
- Displaying professionalism in all cases.
- Providing adequate staff to provide the services.

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• Being fiscally responsible.

#### Values

The Mayor and Council for the first time defined the key values they desire for the Council and staff. These are

- Honesty
- Integrity
- Professionalism
- Empathy
- Being considerate

#### **Guiding Principles**

The Council and staff reviewed the guiding principles established in the Comprehensive Plan and determined these to be still true and useful.

- <u>Quality of Life</u>. Protect and promote a quality of life for our citizens that maintains and promotes the rural small town feel of the community.
- <u>**Transportation**</u>. Ensure a transportation system where people can travel safely and efficiently throughout the community and beyond.
- Goods and Services. Promote the provision of goods and services for our citizens.
- <u>Governance</u>. Ensure the highest level of governance, through elected officials, board and commissions members, and employees.
- <u>Safe Community</u>. Provide a safe environment for citizens of all ages.
- <u>Municipal Services</u>. Provide municipal services and infrastructure that promotes the health, safety, welfare, and quality of life for our community.

#### Session 2 – January 19, 2023

#### **Strategic Plan**

Following a brief discussion and review of the DISC results and their Governance Model, the Council and full staff participated in the discussions of the results of the 2022 strategiec plan and priorities. The Council and staff continued to use the 2019 Comprehensive Plan, and the Plan elements as the basis for their discussions. They reviewed the status of the goals set in the Plan and were able to determine that many of those goals were either

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completed or in process. However, their discussions did lead to additional (new) goals for these areas, and additional goals in new areas of emphasis.

The Comprehensive Plan elements are as follows.

- Future Land Use
- Thoroughfare
- Civic Facilities
- Parks and Open Space
- Drainage
- Water and Wastewater
- Organizational Structure/Services

#### **Initiatives – Strategies and Goals**

After review, the Council determined the 2022 strategies should remain in place as all have been addressed through the course of the year, but none have been fully completed. Changes are noted in red.

#### • 1.0 Future Land Use

- 1.1 Update Zoning Ordinance to reflect goals of Comp Plan.
  - 1.1.1 Review type or basis of zoning applications to determine which is most advantageous to Iowa Colony.
- 1.2 Update the Land Use and Zoning Map to reflect the current growth within the city and planned growth for the ETJ.
  - 1.2.1 Identify regional facilities WWTP, Parks.
  - 1.2.1 Develop locations for a college presence inside the city.
  - 1.2.3 Work with AISD to identify possible school sites.
- 1.3 Review Comp Plan every five years (2024).
- 1.4 Coordinate/exchange ETJ territory with adjoining cities to establish a better-defined boundary.
- 1.5 Prepare guidelines for negotiating development agreements to further encourage implementation of Comp Plan elements.
- 1.6 Seek opportunities to establish a health care presence within the city.

#### • 2.0 Thoroughfares

- 2.1 Review Thoroughfare Plan annually
  - 2.1.1 Expand Thoroughfare Plan to include all forms of transportation including bike lanes, trails, pedestrian safety features, new technologies.
  - 2.1.2 Submit reviewed, revised Thoroughfare Plan to area agencies for coordination and implementation.
  - 2.1.3 Review Thoroughfare Plan of adjacent cities, and Brazoria County annually.
  - 2.1.4 Continue to review Thoroughfare Plan of adjacent cities, and Brazoria County annually.

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- 2.1.5 Submit reviewed, revised Thoroughfare Plan to area agencies for coordination and implementation.
- o 2.2 Establish an overall capital plan for thoroughfare improvements.
  - 2.4.1 Establish a plan for traffic control devices with estimated time frame for implementation.
  - 2.4.2 Coordinate with TxDOT and Brazoria County Toll Road Authority to meet traffic needs on Highway 288.
  - 2.4.3 Plan for city financial participation in city road improvements.
  - 2.4.4 Review and make recommendations for a road impact fee.

#### • 3.0 Civic Facilities

- 3.1 Seek out opportunities for public/private to partnerships with other entities to create distinct places.
- 3.2 Establish architectural design guidelines for city-initiated projects.
- 3.3 Prepare concept plan for city hall and park complex (Government Center).
- 3.4 Prepare a Facilities Master Plan.
  - 3.4.1 Identify needs and timing for major facilities public works, service center, city hall, etc.
    - 3.4.1.1 Public Works Facility
    - 3.4.1.2 Service Center
    - 3.4.1.3 City Hall
    - 3.4.1.4 Animal Adoption Facility.
    - 3.4.1.5 ESD Fire/EMS facilities.
    - 3.4.1.6 Multi-purpose facility.
    - 3.4.1.7 Library
    - 3.4.1.8 Post Office
    - 3.4.1.9 County annex
    - 3.4.1.10 Repurpose existing City Hall.

#### • 4.0 Parks and Open Space

- 4.1 Prepare a Parks Master Plan that meets TP&W guidelines.
  - o 4.1.1 Study the feasibility and make recommendations for the following.
  - 4.1.2 Amphitheater for large venues
  - 4.1.3 Disc golf
  - 4.1.4 Recreation Center.
  - 4.1.5 Dog parks.
  - 4.1.6 Picnic pavilion.
  - 4.1.7 Inclusive/accessible park.
  - 4.1.8 Adventure playground
  - o 4.1.9 Review Parks and Opens Space master plans on bi-annual basis.
  - o 4.1.10 Co-locate parks and detention facilities whenever possible.
- 4.2 Prepare a city limit and ETJ-wide master pedestrian and trail master plan.
  0 4.2.1 Utilize bayous as trail corridors.
- 4.3 Complete the next phase of Iowa Colony City Park at Meridiana.

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- 4.4 Review Dark Sky ordinance for applicability
- 5.0 Drainage
  - 5.1 Continue development of the Comprehensive Master Drainage Plan.
  - 5.1.1 Development Drainage Plan CIP.
  - 5.2 Update flood damage control ordinance.
  - 5.3 Coordinate with local drainage districts on policies and projects.

#### • 6.0 Water and Wastewater

- o 6.1 Develop a comprehensive Water and Wastewater Master Plan.
  - 6.1.1 Develop a water and wastewater capital improvements plan.
  - 6.1.2 Plan for future surface water supply alternatives.
  - 6.1.3 Design for new technologies to ensure a high quality of water and wastewater.
  - 6.1.4 Establish a plan for elevated storage for the city.
- 6.2 Prepare a water model for a city-wide regional water and wastewater system.
- 6.3 Transition ownership and operation of MUD facilities to City in order to create a public water and wastewater system and extend to other parts of the city.
- 6.4 Prepare a plan for wastewater re-use.
- 6.5 Ensure backup power systems for outages.
- o 6.6 Identify locations for a regional wastewater treatment plant

#### • 7.0 Organizational Structure/Services

- 7.1 Prepare staffing plan keyed to growth milestones.
  - 7.1.1 Prepare police department plan based on proactive principles by population.
  - 7.1.2 Review and establish recommendations on bring contract services in-house.
- 7.2 Continue to seek opportunity for a municipal broadband fiber network.
- 7.3 Secure city-wide trash collection services.
- 7.4 Establish fire-protection training program for residents.
- 7.5 Establish a Citizens Academy addressing all department services.
- 7.6 Establish a standardized on-boarding process for new employees.
- 7.7 Complete the muni-code project.

#### Capital Investment Plan (CIP)

Council and staff then worked on the development of a draft Capital Investment Plan.

They answered four questions through the course of their conversations.

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- 1. Why do we need a CIP?
- 2. What are the guiding principles for placing a project on the list?
- 3. What are our funding options?
- 4. What projects do we anticipate for the future?
- 5. What are our CIP priorities?

#### Why do we need a CIP?

Council began to list the reasons a CIP is needed in Iowa Colony as follows.

- To anticipate and build needed projects over time.
- To be able to prioritize projects.
- To have goals to work toward.
- To review the reality of costs associated with projects construction and operational.
- To be transparent.
- To provide a plan and allocation of resources effectively.
- To build consensus and buy-in for the projects.
- To possibly respond to unfunded mandates.
- To manage both financial and physical growth.

What are the guiding principles for placing a project on the list? To be able to answer these key questions for a proposed project.

- Why is it needed?
- Does it meet the city's vision and mission.
- Is it consistent with the Comprehensive Plan.
- Is it consistent with other plans (drainage, parks, facilities, etc.)?
- Is it affordable?
- When will it likely be affordable?
- Does the public want it?
- Is it a mandate or legal requirements?
- How does the proposed project compare priority-wise with other projects on the list?
- Does it need to be financed? If so, in what way.

What are the funding options available for project implementation? (In no particular order.) Although not an exhaustive list, these are the funding sources Council and staff identified.

- Grants
- Property taxes
- Sales taxes

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- Bonds Utility/Revenue, General Obligation (voted), Certificates of Obligation (non-voted)
- Impact fees
- Contributions
- Public/private partnerships (P3)
- Special districts
- Pay-as-you-go (general operations or set-asides)

#### What projects do we anticipate for the future?

Although not an exclusive list these are the projects that council and staff identified.

- Water and wastewater treatment plants and elevated storage (Water/Wastewater Master Plan)
- Animal shelter
- Library
- Multipurpose center
- Road expansions (IC Blvd, Davenport, etc.)
- Park improvements (Parks Master Plan)
- Utilities outside subdivisions (rural areas)
- Bike lane retrofits on existing streets
- Electric vehicle chargers
- Public works equipment
- Service center
- Round-abouts (streets)
- Municipal government complex (and associated facilities-library, city hall, court, multi-purpose center)
- Drainage project (Drainage Master Plan
- Life Safety building

What are the priorities of the identified CIP projects?

The Council and staff were asked to place three colored dots beside each of the listed projects. The dots represent the following and were assigned points to be collated.

- Red dots 1-5 years funding/construction 3 pts
- Blue dots 6-10 years funding/construction -2 pts
- Yellow dots Over 10 years funding/construction 1 pts

This is the prioritized list. Including the number of dots and points

Project	Dots	Points	Rank
---------	------	--------	------

Water and wastewater treatment plants and elevated storage (Water/Wastewater Master Plan)	10 red, 1 blue, 1 yellow	33	1
Park improvements (Parks Master Plan)	7 red, 3 blue, 1 yellow	28	2
Municipal government complex (and associated facilities-library, city hall, court, multi-purpose center)	6 red, 3 blue, 1 yellow	25	3
Utilities outside subdivisions (rural areas)	4 red, 6 blue, 0 yellow	24	4
Drainage project (Drainage Master Plan	6 red, 1 blue, 1 yellow	21	5
Animal shelter	3 red, 5 blue, 1 yellow	20	6
Public works equipment	6 red, 0 blue, 1 yellow	19	7
Life Safety building	0 red, 6 blue, 7 yellow	19	7
Library	1 red, 3 blue, 8 yellow	17	8
Public Works Service center	1 red, 6 blue, 1 yellow	16	9
Round-abouts (streets)	3 red, 1 blue, 4 yellow	15	10
Bike lane retrofits on existing streets	2 red, 2 blue, 3 yellow	13	11
Electric vehicle chargers	2 red, 1 blue, 4 yellow	12	12
Multipurpose center	0 red, 1 blue, 9 yellow	11	13
Road expansions (IC Blvd, Davenport, etc.)	1 red, 1 blue, 4 yellow	9	14

#### **City Staff Implementation Sessions**

#### March 8, 2023

On March 8, 2023, the facilitator met with the City Manager and Executive Staff to review the outcomes of the planning session and to determine next steps for the development of the implementation plan.

**Implementation Plan Process**. The staff reviewed the implementation portion of the planning process and revised the Implementation Plan. During the discussions, a staff

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member was assigned as the team facilitator for the development of the implementation plan for each strategic focus area. The group worked together to develop action steps, with proposed timelines. At the end of the day, a draft implementation plan had been established. The implementation plan is a separate document.

CIP. In addition, the staff began the development of the CIP to include estimated costs, funding sources and timeline for construction.

#### Reporting

Finally, staff reviewed reporting protocols. These protocols serve the purpose of keeping the staff on schedule with the implementation of strategies, keeping the City Administrator informed, and providing regular reports to the Council on the status of the implementation of the adopted strategies. This provides for long term accountability toward the implementation of the Strategic Plan.

#### **Reporting Protocols**

- Council
  - Receives periodic updates regarding various projects related to the strategic plan.
  - Receives formal status reports, including an annual report from staff to the Council.

#### • City Administrator

• City Administrator receives regular updates from staff at regular staff meetings on progress of assignments.

#### Council Approval March 20, 2023

On March 20, 2023, the Council reviewed their work as well as the work of the staff since the planning session in January. After a thorough discussion the Report was approved as amended unanimously.

#### Conclusion

The Mayor, Council and staff of the City of Iowa Colony worked through a governance and planning process that allowed the Council to create a governance model and identify and expand strategies for moving the city forward. The process brought the staff leadership and Council closer together as a team and developed an implementation process to ensure the strategies are addressed and accomplished over time.

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# Strategic Plan 2022-2025

Council Governance Session January 12, 2023

Council/Staff Planning Retreat January 19, 2023

> Adopted TBD

Prepared and Facilitated By Ron Cox Consulting

# Vision Statement (2023)

# The City of Iowa Colony will be an engaging, safe, full-service, state of the art city.

# Key Vision Elements 2022

- The city is a full-service city providing all the traditional services a city normally provides.
- The city has mixed development to meet the needs of all who live and want to live within the city. Mixed development includes a combination of single family housing, multi-family housing, affordable housing, retail, big-box retail, and specialty shops, with a wide variety of uses and services.
- A diversity of rural and suburban mix within the city.
- A "State of the Art" city.
- A city above the rest.
- A safe city.
- A city that invests in its youth and citizens of all ages.
- A city that works with public and private partners to improve the quality of life for its citizens.
- A city that engages the community.
- An intermodal city providing transportation opportunity for connectivity in all modes of transportation.

# Mission Statement (2023)

The Mission of the City of Iowa Colony and its staff is to continually improve the quality of life by:

- Creating and providing infrastructure to the extent the city can provide its own services to citizens.
- Promoting economic development.
- Being responsive to service requests.
- Displaying professionalism in all cases.
- Providing adequate staff to provide the services.
- Being fiscally responsible.

### **Mission Elements**

- Creating and providing infrastructure to the extent the city can provide its own services to citizens.
- Promoting economic development.
- Responsive to service requests.
- Displaying professionalism in all cases.
- Providing adequate staff to provide the services.
- Being fiscally responsible.

## **Guiding Principles** (Comprehensive Plan)

- <u>Quality of Life</u>. Protect and promote a quality of life for our citizens that maintains and promotes the rural small town feel of the community.
- <u>**Transportation**</u>. Ensure a transportation system where people can travel safely and efficiently throughout the community and beyond.
- <u>Goods and Services</u>. Promote the provision of goods and services for our citizens.
- <u>Governance</u>. Ensure the highest level of governance, through elected officials, board and commissions members, and employees.
- <u>Safe Community</u>. Provide a safe environment for citizens of all ages.
- <u>Municipal Services</u>. Provide municipal services and infrastructure that promotes the health, safety, welfare, and quality of life for our community.

## **City of Iowa Colony**

## Council

## **Leadership Philosophy**

The Council of the City of Iowa Colony will lead by...

- With honesty and integrity.
- With transparency.
- By listening first.
- By being visible in the community.
- By being responsive to the needs of the community and its citizens.
- With confidentiality.
- By looking at issues globally not myopically how a decision affects all.
- With an open mind.
- By confessing your mistakes to others.
- By being fiscally responsible not wasteful; diligent, discerning.
- By setting the example
  - Hard on issues; soft on people.
  - Speaking person to person on issues (not on Facebook).

0

- By focusing on the good what is good for Iowa Colony
- Listen, learn, understand, and then respond.
- Providing facts and accurate information.
- Focusing on the good and pursuing the best interests of the entire city.
- By building trust.

## **City of Iowa Colony**

## Council

## **Communication Philosophy**

The Council of the City of Iowa Colony will communicate by...

- By listening first.
- By being available.
- Treating everyone with respect.
- Conveying the message that everyone is equally important.
- Enjoying our job and having fun.
- Being genuine be yourself.
- By being cooperative with others.
- Having an attitude of agreeing to disagree, without being disagreeable.
- Speak with respect and humility.
- Listen with understanding and compassion.
- By having an open-line with everyone.

# City of Iowa Colony Council and Staff Expectations

Council expects the following of each other...

- To be amicable in all respects.
- To be open-minded and honest.
- To be cordial.
- Responsive.
- Ask why. Tell why.
- For all to participate.
- To follow procedures, decorum and protocols.
- To project the culture we expect in all circumstances.
# **City of Iowa Colony**

# **Council and Staff**

# **Expectations**

Council expects the following of staff...

- Do your jobs for the citizens' sake.
- Have a customer service mindset.
- Be the face of the city.
  - $\circ$  Friendly.
  - Competent
  - Knowledgeable.
  - Efficient.
- To be trained invest in professional and continual training for all employees.
- To have the proper compensation (investment).
- To respect the Chain-of-command throughout the organization.

# **City of Iowa Colony**

# **Council and Staff**

# **Expectations**

The staff of the City of Iowa Colony expects the following of the Mayor and City Council (as stated by the City Council ...

- To be deliberate and fair in dealings with the staff and issues.
- To take care of the staff fair compensation, benefits and training.
- To know who they are.
- Do not take advantage of the staff.
- Be nice.
- Follow the Chain-of-command.
- Be respectful.
- Be appreciative.
- Have confidence in them.
- Do not take the staff for granted.
- Provide them the resources to do their work.

# **1.0 Future Land Use**

- 1.1 Update Zoning Ordinance to reflect goals of Comp Plan.
   0 1.1.1 Review type or basis of zoning applications to determine which is most advantageous to Iowa Colony.
- 1.2 Update the Land Use and Zoning Map to reflect the current growth within the city and planned growth for the ETJ.
  - o 1.2.1 Identify regional facilities locations WWTP, Parks.
  - $\circ$  1.2.1 Develop locations for a college presence inside the city.
  - $\circ$  1.2.3 Work with AISD to identify possible school sites.
- 1.3 Review Comp Plan every five years (2024).
- 1.4 Coordinate/exchange ETJ territory with adjoining cities to establish a better-defined boundary.
- 1.5 Prepare guidelines for negotiating development agreements to further encourage implementation of Comp Plan elements.
- 1.6 Seek opportunities to establish a health care presence within the city.

### 2.0 Thoroughfares

#### Initiatives

#### • 2.1 Review Thoroughfare Plan annually

- 2.1.1 Expand Thoroughfare Plan to include all forms of transportation including bike lanes, trails, pedestrian safety features, new technologies.
- 2.1.2 Submit reviewed, revised Thoroughfare Plan to area agencies for coordination and implementation.
- 2.1.3 Review Thoroughfare Plan of adjacent cities, and Brazoria County annually.
- 2.1.4 Continue to review Thoroughfare Plan of adjacent cities, and Brazoria County annually.
- 2.1.5 Submit reviewed, revised Thoroughfare Plan to area agencies for coordination and implementation.

# • 2.2 Establish an overall capital plan for thoroughfare improvements.

- 2.4.1 Establish a plan for traffic control devices with estimated time frame for implementation.
- 2.4.2 Coordinate with TxDOT and Brazoria County Toll Road Authority to meet traffic needs on Highway 288.
- 2.4.3 Plan for city financial participation in city road improvements.
- 2.4.4 Review and make recommendations for a road impact fee.

# **3.0 Civic Facilities**

- 3.1 Seek out opportunities for public/private to partnerships with other entities to create distinct places.
- 3.2 Establish architectural design guidelines for city-initiated projects.
- 3.3 Prepare concept plan for city hall and park complex (Government Center).
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    - 3.5.1.10 Repurpose existing City Hall.

### 4.0 Parks and Open Space

- 4.1 Prepare a Parks Master Plan that meets TP&W guidelines.
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  - 4.1.2 Amphitheater for large venues
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  - 4.1.9 Review Parks and Opens Space master plans on bi-annual basis.
  - o 4.1.10 Co-locate parks and detention facilities whenever possible.
- 4.2 Prepare a city limit and ETJ-wide master pedestrian and trail master plan.
  - 4.2.1 Utilize bayous as trail corridors.
- 4.3 Complete the next phase of Iowa Colony City Park at Meridiana.
- 4.4 Review Dark Sky ordinance for applicability

# **5.0 Drainage**

- 5.1 Continue development of the Comprehensive Master Drainage Plan.
- 5.2 Development Drainage Plan CIP.
- 5.3 Update flood damage control ordinance.
- 5.4 Coordinate with local drainage districts on policies and projects.

### 6.0 Water and Wastewater

- 6.1 Develop a comprehensive Water and Wastewater Master Plan.
  - 6.1.1 Develop a water and wastewater capital improvements plan.
  - o 6.1.2 Plan for future surface water supply alternatives.
  - 6.1.3 Design for new technologies to ensure a high quality of water and wastewater.
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- 6.4 Prepare a plan for wastewater re-use.
- 6.5 Ensure backup power systems for outages.
- 6.6 Identify locations for a regional wastewater treatment plant

## 7.0 Organizational Structure/Services

- 7.1 Prepare staffing plan keyed to growth milestones.
  - 7.1.1 Prepare police department plan based on proactive principles by population.
  - 7.1.2 Review and establish recommendations on bring contract services in-house.
- 7.2 Continue to seek opportunity for a municipal broadband fiber network.
- 7.3 Secure city-wide trash collection services.
- 7.4 Establish fire-protection training program for residents.
- 7.5 Establish a Citizens Academy addressing all department services.
- 7.6 Establish a standardized on-boarding process for new employees.
- 7.7 Complete the muni-code project.

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# **City of Iowa Colony Master Drainage Plan**

TWDB Contract # 2000040016 May 30, 2023















#### **Prepared For:**

ADICO Consulting Engineers, LLC Texas Water Development Board City of Iowa Colony Brazoria County Brazoria Drainage District 4 Brazoria County Drainage District 5

#### **Prepared By:**



CONSULTING ENGINEERS

2500 Tanglewilde, Suite 120 Houston, TX 77063 (713) 789-1900 Firm #9756 WGA Project #00352-012

May 30, 2023







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# List of Acronyms and Abbreviations

1D/2D	1-dimensional/2-dimensional
ACE	Annual Chance Event
COIC	City of Iowa Colony
BCA	Benefit-Cost Analysis
BCDCM	Brazoria County Drainage Criteria Manual
BCDD5	Brazoria County Drainage District No. 5
BDD4	Brazoria Drainage District No. 4
BDF	Basin Development Factor
BCR	Benefit-Cost Ratio
DEM	Digital Elevation Model
DCM	Drainage Criteria Manual
ETJ	extraterritorial jurisdiction
FEMA	Federal Emergency Management Agency
FIS	Flood Insurance Study
FIRM	Flood Insurance Rate Map
GIS	Geographic Information System
HEC	Hydrologic Engineering Center (U.S. Army Corps of Engineers)
HMS	Hydrologic Modeling System
LiDAR	Light Detection and Ranging
MDP	Master Drainage Plan
NAD	North American Datum
NAVD	North American Vertical Datum
NRCS	Natural Resources Conservation Service
NLCD	National Land Cover Database
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
ORNL	Oak Ridge National Laboratory
RAS	River Analysis System
RFPG	Regional Flood Planning Group

StratMap	Strategic Mapping Program
SVI	Social Vulnerability Index
TCEQ	Texas Commission on Environmental Quality
THC	Texas Historical Commission
TIN	triangulated irregular network
TNRIS	Texas Natural Resources Information System
TPWD	Texas Parks and Wildlife Department
TxDOT	Texas Department of Transportation
U.S.	United States
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WSEL	water surface elevation

### **Executive summary**

The area of interest for this study is the City of Iowa Colony (COIC) and the surrounding Extra-Territorial Jurisdiction (ETJ). COIC is located south of Houston in northern Brazoria County. In recent years, the city has experienced significant growth with the development of several master planned communities within the city limits and ETJ. The purpose of this report is to develop a Master Drainage Plan (MDP). This master drainage plan is a joint effort funded by City of Iowa Colony, the Texas Water Development Board (TWDB), Brazoria County, Brazoria Drainage District No. 4 (BDD4), and Brazoria County Drainage District No. 5 (BCDD5).

The study area encompasses approximately 27.8 square miles and includes the three (3) primary drainage channels that serve the stormwater runoff from the study area. These streams are the West Fork Chocolate Bayou, North Hayes Creek and South Hayes Creek which are all tributaries to Chocolate Bayou. These tributaries are presented in the Federal Emergency Management Agency's (FEMA) December 30, 2020, Flood Insurance Study (FIS) as detailed studied streams with identified flood hazard boundaries and base (100-year) flood elevations.

For the flood hazards identified in the 2020 FEMA FIS, both the North Hayes Creek and South Hayes Creek flood hazards were prepared using the U.S. Army Corps of Engineers' (USACE) Hydrologic Engineering Center's HEC-2 computer program based on steady state backwater calculations. Peak flows for the various storm events were determined using the regional regression equations presented in the 1977 U.S. Geological Survey Report 77-110 titled Technique for Estimating the Magnitude and Frequency of Floods in Texas. The West Fork Chocolate Bayou flood hazards were last updated in 2015 using the USACE's HEC-RAS (River Analysis System) and HEC-HMS (Hydrologic Modeling System) computer programs. The HEC-RAS simulation of flood profiles is based on steady state backwater calculations. The HEC-HMS simulation of stormwater runoff utilizes the rainfall data presented in the United States Weather Bureau's 1961 document titled Technical Paper 40 – Rainfall Frequency Atlas of the United States.

The goal of this project is to provide a better understanding of the existing flood hazards along the study streams using the most current rainfall data coupled with recently adopted regional drainage criteria and newer computer simulation methodology, and to identify drainage improvement projects that can be implemented to help reduce existing flood risks to properties within the study area. The intent of the hydrologic and hydraulic model simulations is not to revise the published FEMA-identified flood hazards but to assist in the efforts for achieving the overall project goal.

Hydrologic and hydraulic model simulations of the study area were prepared to determine the existing conditions flood hazards. Two alternative drainage improvement concepts were analyzed and compared to the existing conditions results to determine the benefits for reducing flood risks. The first alternative (Capital Improvement Project - CIP) includes the construction of nine (9) flood risk reduction ponds along the studied streams within six (6) general areas to provide additional floodplain storage volume capacity and peak flow attenuation during major storm events. The second alternative (Alt) includes channel widening to provide additional conveyance capacity and the construction of ten (10) ponds to mitigate for the improvements.

The assessment of the existing flood hazards and potential benefits resulting from the two alternative drainage improvement concepts were prepared considering the 24-hour, 0.2% (500-year), 1% (100-year), 2% (50-year), and 10% (10-year) annual chance storm events based on National Oceanic and Atmospheric Administration (NOAA) Atlas 14 rainfall depths. The USACE' HEC-HMS computer program is used to simulate stormwater runoff for the study area watershed. The USACE's HEC-RAS computer program (1-dimensional/2-dimensional unsteady flow approach) is used to simulate flood routing and conveyance of flood flows along the streams and throughout the overbanks within the study area. This report outlines the steps and procedures followed in preparing the drainage study and presents the results of the findings. Cost and benefits were quantified for each drainage alternative. A summary table comparing flood risks of the existing conditions and the two alternative drainage improvements referenced in this study is provided in **Table ES.1**.

Due to the more complex modeling approach, detailed terrain and updated rainfall data used in the study efforts, both the depth and extent of flood hazards along the streams are increased from those identified in the FEMA Flood Insurance Rate Maps (FIRM). This suggests that the number of existing structures located within the study area that are susceptible to flood risk is increased more than that previously anticipated from the FEMA FIRM flood hazards. Based on the FEMA FIRM flood hazard boundaries, approximately 12.2 square miles within the study area are considered to be inundated from a 100-year flood event. In comparison, approximately 16.3 square miles are considered to be inundated from a 100-year flood event resulting from the updated assessment of existing flood hazard conditions. Further, the assessment has resulted in the determination that the three main streams within the study area have a level of service to safely convey flood waters from less than a 10-year storm event.

Building upon the updated existing conditions flood hazards assessment, a CIP is identified. The CIP is made up of the construction of several flood risk reduction ponds along the three streams throughout the watershed. The locations of the ponds are chosen to avoid ongoing and planned areas of development within the study area. With the exception of one pond located in the upper reach of the West Fork Chocolate Bayou watershed, the remaining ponds are all located within the downstream reaches where there is minimal number of structures (i.e., mostly agricultural farmland). The ponds are proposed to help provide additional floodplain storage within the overall drainage system of the study area with the intent of reducing the flood risks throughout the watershed. A total of 3,671 acre-feet of storage volume across 9 ponds is anticipated to be added for the 100-year flood event. However, due to the limited ability to efficiently convey the flood waters to these ponds, the reduction on flood depths is minimal (no more than 0.12 foot).

An alternative plan was developed to determine if additional reduction in flood risks to the study area could be realized. This alternative incorporates channel modifications along the three streams within the study area to help provide additional level of service and improved flood carrying capacity. The plan also includes a total of 10 ponds including the 9 ponds from the CIP plan plus the expansion of an existing COIC detention pond. The total detention volume provided across 10 ponds is 4,363 acre-feet storage volume.

Modifications to existing stream crossing structures were not included within the alternative plan. The results of the analysis suggest that the channel modifications have the potential to

provide significant flood risk reduction within the study area. However, the volume provided in the ponds is not sufficient to mitigate for the increases in flood hazards further downstream of the study area. The improved flood flow conveyance capacity of the streams has the potential to push more water into the receiving Chocolate Bayou stream, thus resulting in increases to flood depths along this stream. It is determined that additional storage volume of approximately 2,000 acre-feet is needed for the Alt plan to offset the impacts anticipated. Due to the lack of available right-of-way within the study area, this volume would need to be provided downstream, outside of the study area. It is recommended that a future partnership project with the drainage districts be formed to explore future opportunities for improving channel conveyance and adequately offsetting its impacts.

The CIP and Alt projects were evaluated based on cost and benefit. The CIP and Alt projects have a total cost of \$110.98 million and \$278.96 million respectively. The CIP project has a higher BCR and is easier to implement. In comparison to the Alt, the CIP plan also has less challenges as it relates to ROW acquisition, environmental constraints, and utility conflict. Additionally, the recurring costs associated with operation and maintenance were much higher for the Alt plan compared to the CIP.

On the basis of the findings documented in this report, it is recommended the CIP plan be considered for inclusion in the TWDB State Flood Plan. The COIC is located in Region 6 San Jacinto Regional Flood Planning Group. This report and supporting technical data has been submitted to San Jacinto RFPG for evaluation and suitability for inclusion in the regional flood plan. The potential funding strategies to implement the project include COIC internal funding, joint/cop-operative funding, impact fees and external funding sources at the state and federal level.

ESTIMATED PROJECT BENEFITS	EXISTING CONDITIONS	CAPITAL IMPROVEMENT PLAN: PONDS ONLY	ALTERNATIVE: PONDS AND CHANNEL WIDENING
Area in 100yr (1% annual chance) Floodplain (sq.mi.)	16.16	15.83	14.34
Area in 500yr (0.2% annual chance) Floodplain (sq.mi.)	19.33	19.18	18.5
Estimated number of structures at 100yr flood risk	1111	1043	875
Residential structures at 100-year flood risk	1075	1007	840
Estimated Population at 100-year flood risk	657	630	566
Critical facilities at 100-year flood risk (#)	0	0	0
Number of low water crossings at flood risk (#) $^1$	9	8	8
Estimated number of road closures (#)	N/A	N/A	N/A
Estimated length of roads at 100-year flood risk (Miles)	25.76	24.19	19.19
Estimated farm & ranch land at 100-year flood risk (acres)	8.62	8.21	7.02
Number of structures with reduced 100yr (1% annual chance) Flood risk	-	666	956
Number of structures removed from 100yr (1% annual chance) Flood risk	-	68	236
Number of structures removed from 500yr (0.2% annual chance) Flood risk	-	63	357
Residential structures removed from 100yr (1% annual chance) Flood risk	-	68	235
Estimated Population removed from 100yr (1% annual chance) Flood risk	-	27	91
Critical facilities removed from 100yr (1% annual chance) Flood risk (#)	-	0	0
Number of low water crossings removed from 100yr (1% annual chance) Flood risk (#)	-	1	1
Estimated reduction in road closure occurrences	-	N/A	N/A
Estimated length of roads removed from 100yr flood risk (Miles)	-	1.57	6.57
Estimated farm & ranch land removed from 100yr flood risk (acres)	-	0.41	1.6
Estimated reduction in fatalities (if available)	-	N/A	N/A
Estimated reduction in injuries (if available)	-	N/A	N/A

#### Table ES.1Flood Risk Comparison Summary

<sup>1</sup>Represents all stream crossings that are inundated during the 100-year event

### **1.0 Introduction**

This project is identified as the City Of Iowa Colony Master Drainage Plan. The City of Iowa Colony and its ETJ are located within the Chocolate Bayou Watershed a sub-basin within the United States Geological Survey Hydrologic Unit Code 10 (USGS HUC-10) 1204020404 Mustang Bayou watershed.

#### 1.1 Planning area general description

The study area encompasses three tributaries of Chocolate Bayou – West Fork Chocolate Bayou, North Hayes Creek and South Hayes Creek that fall within the jurisdictional limits of the BDD4 and BCDD5. The general study limits extend from the confluence with Chocolate Bayou in the East to FM 521 Road on the west side, and from the County Road 60 on the south to Texas State Highway 6 on the north (see **Exhibit 1**).

A majority of the study area is open pasture with mixed use single-family residential development. The topography of the area is relatively flat, with expansive floodplains that extend beyond the channels. The study area is bisected by a major transportation corridor identified as Texas State Highway 288. This roadway has a north-south alignment with crossings of all three drainage channels. Most of the properties located east of State Highway 288 are identified as being inundated during a 1% annual chance (100-year) flood event. There is floodplain identified for some properties west of State Highway 288, but not to the extent as it is in the eastern portion of the study area.

The city and its ETJ are currently experiencing substantial development. While current regulations are in place to ensure that these new development result in no adverse impact to the flood hazards along the receiving streams, there are no requirements for these developments to improve the existing flood hazards on adjacent properties. Further, these new developments have the potential to utilize land that may be better suited for the implementation of flood risk reduction features for the existing community.

#### **1.2 Project purpose and objectives**

The proposed project is identified as the 2022 City of Iowa Colony Master Drainage Plan. The plan is prepared through a collaborative effort between the City of Iowa Colony, Brazoria County, Brazoria Drainage District No. 4, and Brazoria County Drainage District No. 5 with 50% matching grant funds from the Texas Water Development Board. This report is prepared to document the analysis of existing drainage conditions and proposed improvements that help to reduce flooding within the study area (COIC and its ETJ).

The objectives of the project are to:

- Delineate drainage areas and generate Atlas 14 rainfall runoff hydrographs
- Develop Unsteady flow (i.e., flow values vary over time) HEC-RAS 1D/2D models to analyze existing flood risks
- Develop flood reduction goals and objectives based on the existing conditions analysis

- Identify two (2) alternatives that can be implemented for flood risk reduction
- Develop Unsteady flow HEC-RAS 1D/2D models to analyze benefits of the proposed alternatives
- Quantify cost and flood risk reduction benefits of each alternative
- Prepare a master plan report documenting technical methodologies, model results, and discussion of the findings of the study.

#### 1.3 Scope of work

The focus of this study is to evaluate existing flood hazards along the three major streams that receive stormwater runoff from the COIC and its ETJ, and to analyze proposed projects to reduce flooding.

The baseline models created are based on 2018 LiDAR and supplemented with topographic survey for a majority of the stream crossings. The study does not include hydraulic modeling of the internal storm drainage network and creeks/channel system that convey flows to the three major streams within the study area.

The purpose of the improvement projects is to provide flood risk reduction benefits and are not intended to mitigate future development conditions. The development conditions identified are based on the existing development within the city in addition to major development projects which have been approved or are under construction at the time of the beginning of the study. Potential upgrades to the existing bridge and culvert crossings are outside the scope of this analysis and were not considered in this study effort. Determination of potential impacts of the project on Waters of the U.S. and/or jurisdictional wetlands is beyond the scope of work for this project.

The baseline models created for this study are not intended to be used to support any FEMA map revisions. However, the models developed for this MDP could be further refined and used to revise the FEMA FIRMS at a later date and under another contact.

#### **1.4** Assumptions and constraints

The proposed project must ensure no adverse impacts to existing flood hazard conditions. The proposed project is intended to reduce flood risks throughout the COIC and its ETJ and is not intended to mitigate future development. The development conditions assumed are based on current development and developments that are in progress at the start of the study.

The study limits encompass the COIC and its ETJ - the downstream limit of the hydraulic model is located at the confluence with Chocolate Bayou. Backwater effects from Chocolate Bayou are not considered in this analysis. Rather, the assumed tailwater condition is based on normal depth with the energy grade line slope set equivalent to the channel slope.

### 2.0 Data collection and review

Data collected and reviewed for this project include the effective FEMA model data, drainage reports and models by other engineers, construction drawings for various development projects, Texas Natural Resources Information System (TNRIS) and topographic survey of existing stream crossings.

#### FEMA FIS:

The Federal Emergency Management Agency (FEMA) Flood Insurance Study (FIS) provides useful information about the existing flood hazards within the study area resulting from flooding along the West Fork Chocolate Bayou, North Hayes Creek and South Hayes Creek. Information about the hydrologic and hydraulic models used to define the flood hazards are available from FEMA through their Technical Data Request service. Information provided within the models is assessed and compared to other data to verify the relevance for use in the MDP study effort. The existing FEMA flood hazards and watershed boundaries for each stream are shown in **Exhibit 2** and **Exhibit 3**, respectively.

Based on the assessment of the model data, it is determined that the hydrologic information is not useful. The hydrology for the North and South Hayes Creeks uses regional regression equations to determine the peak flows along the streams. Further, while the hydrology for West Fork Chocolate Bayou is updated using the USACE HEC-HMS simulation of runoff conditions, the hydrologic calculations for all three streams reference rainfall depths estimated from the U.S. Weather Bureau's Technical Paper No. 40 Rainfall Frequency Atlas of the United States. The rainfall depths for the respective storm events are less than those currently recommended for use by the National Weather Service's Hydrometeorological Design Studies Center (i.e., National Oceanic and Atmospheric Atlas 14 rainfall).

The hydraulic models of all three streams provide useful information with respect to existing cross section geometry and stream crossing structures. Channel cross section geometry from the FIS hydraulic models is compared to the sections prepared using the RASMapper feature of HEC-RAS. Further, the channel roughness values referenced in the FIS models are considered for use within the HEC-RAS 1D/2D model. The channel crossing structures were identified in the models and locations verified with existing aerial photography to confirm their existence. Only those structures determined to currently exist were included within the HEC-RAS 1D/2D model.

#### Drainage Impact Analysis for the Phase Three Development of Meridiana (December 2017):

This drainage report was prepared by EHRA Engineering to address the drainage impacts associated with the ongoing development of the Meridiana subdivision within the West Fork Chocolate Bayou watershed. Information referenced from this report include the design drawings for the Meridiana Parkway bridge crossing of the West Fork Chocolate Bayou.

#### Drainage Impact Analysis for Sharp-Scherer and Sharp-Dobson Tracts (November 2022):

This drainage report was prepared by LJA Engineering, Inc. to address the drainage impacts associated with the proposed development in the West Fork Chocolate Bayou watershed. Information referenced from this report is used to help delineate the sub-basin alignment within the watershed.

Survey Data for Stream Crossing Structures along North Hayes Creek and South Hayes Creek (June 2022):

Topographic survey data was obtained for ten (10) structures crossing North Hayes Creek and South Hayes Creek. This information was prepared to verify the structure sizes and details not available from other sources. This information is used to clarify the geometric features within the HEC-RAS model.

#### 2.1 Public meeting and technical coordination

Throughout the project duration, a series of public meetings and steering committee meetings were held. These meetings were important to ensure that the stakeholders understand the goals and scope of the project study. All public and steering committee meetings were held at the City of Iowa Colony City Hall.

The first public meeting was held on February 23, 2022, to inform the public of the proposed study and to gather input regarding flooding issues in the areas. The second public meeting was held on June 1, 2022, to present the findings of the existing conditions evaluation and conceptual drainage improvements that could achieve the goals and objectives of the project. At each of the meetings, opening remarks were made by ADICO, LLC (representing the COIC) and a formal presentation was made by ADICO and Ward, Getz and Associates, PLLC to discuss the project. Exhibits were shown on the projector screen during the presentation.

Poster boards were also set up at the front of the room to facilitate Q&A after the presentation. The public meetings were not well attended by the general public and no input/ comments were received. The meetings were held in the evening at 6pm and notices were published on the City's website weeks in advance. **Appendix E** includes the copies of the public notices.

In addition to the public meetings, a series of Steering Committee meetings were held in 2022 (February 18, May 5, and May 24) with representatives from ADICO (COIC Engineer), BDD4 and BCDD5. During these meetings, results of existing conditions analysis was discussed and input/feedback on conceptual project alternatives was gathered to collaboratively identify the project features that should be included/excluded in the analysis.

#### 2.2 Base mapping information

The primary source of terrain data used for this hydraulic study was developed from the Texas Natural Resources Information System (TNRIS) StratMap 2018 Upper Coast LiDAR data set (50 cm resolution) and supplemented with the TNRIS USGS 2019 Hurricane LiDAR data set (70 cm resolution). Both LiDAR data sets were surveyed by Fugro Geospatial, Inc. Multipoint files were projected and adjusted into Horizontal NAD83 State Plan projection and Vertical NAVD88 elevation using U.S. foot measurement. Both the hydrologic and hydraulic analysis for the study area were completed based upon this topographic data.

#### 2.3 Survey

Limited field survey was performed to help verify existing stream crossing structures. Photos and field sketches of various structures were collected from various agencies to help verify the geometry of the structures simulated in the hydraulic model. The hydraulics section of this report describes the details of how the survey data has been incorporated into the study efforts.

#### 2.4 Storm drainage system infrastructure assessment

The City of Iowa Colony is a small but growing community that includes a mix of residential communities and rural areas. The storm drainage system in each of the areas vary considerably. Stormwater from these systems discharge into drainage channel/creeks that bisect the community.

The typical storm drainage system within the subdivision generally consists of a combination of surface and subsurface drainage systems that are designed to collect and manage rainwater runoff from the community's streets, sidewalks, parking lots, and other impervious surfaces. This includes a network of underground storm sewer, stormwater detention basin and outfalls.

The drainage system for rural communities can vary depending on the specific characteristics of the community and the surrounding landscape. In general, however, the drainage system for rural communities is designed to manage rainwater runoff from the community's roads, agricultural land, and other impervious surfaces. These includes a network of ditches and culverts. These ditches are designed to collect and channel water away from the community's roads and other paved surfaces. The culverts are installed beneath roads and other crossings to allow water to flow beneath them.

Redevelopment of rural areas are required to mitigate from floodings. This may include storm sewer system, detention basin and detention improvements to offset post development runoff.

Field topographic survey was requested for eleven (11) structures within the boundaries of the West Fork, North Hayes, and South Hayes watersheds. These structures are identified with letters A through K. Due to right-of-entry issues, field data was not collected for Bridge crossing "E", resulting in topographic information for a total of 10 structures. Four (4) structures located along North Hayes and six (5) structures along South Hayes. The information obtained includes cross sections at each of the bridge crossings, elevations of high chord and low chord along with size and number of piers. Surveyed bridge data and locations have been included in **Appendix G**.

### 3.0 Hydrologic modeling

For this study, the hydrologic methodology utilized is based on the guidance outlined in the May 2022 Brazoria County Drainage Criteria Manual (BCDCM). The study's simulation of hydrologic processes was conducted using the U.S. Army Corps of Engineers' (USACE) Hydrologic Engineering Center's Hydrologic Modeling System (HEC-HMS) computer program (version 4.8) which is used to compute peak flows and generate runoff hydrographs applied in the Hydraulic Analysis.

#### 3.1 Model development

The HEC-HMS model simulates stormwater runoff based on sub-basin parameters including drainage area, rainfall, soil infiltration losses, transformation of rainfall excess to runoff, and channel and overbank flood routing. Peak flows and storm runoff hydrographs were determined for the 10% (10-year), 2% (50-year), 1% (100-year) and 0.2% (500-year) annual chance rainfall events. The resulting storm water runoff hydrographs from each sub-basin are used as input within the hydraulic model simulation of the flood hazards for the study area.

The hydrology for the CIP simulation uses the same hydrology as that identified for the existing conditions. The proposed flood risk reduction ponds are assumed to be dry-bottom ponds that do not result in an increase in impervious cover and does not change the overall drainage characteristics of the sub-basins that encompass the ponds. This approach provides a direct determination of the benefits realized by adding storage to the overall drainage system within the study area.

#### 3.2 Subbasin delineation

The sub-basins for the study area were delineated utilizing several sources for guidance. The final sub-basin boundary alignments were influenced by existing features such as recent aerial photographs of existing development, roadway and irrigation canal alignments, channel confluences, and topographic elevation contours. A combination of the TNRIS StratMap Upper Coast LiDAR 2018 and USGS Hurricane LiDAR 2019 were used to generate topographic elevation contours for the watershed. The resulting drainage area map of the sub-basins for existing and proposed conditions can be found in **Exhibits A-2** and **A-3** of **Appendix A** of this report.

#### **3.3** Basin development factor (BDF)

The BDF is the measure of the level of improvements made to a basin's drainage system and thereby, the basin's conveyance and runoff routing efficiency. The BDF method is used to determine the time of concentration (TC) and storage coefficient (R) needed for Clark's Unit Hydrograph Method. The BDF method is composed of two main factors: 1) the main conveyance system (i.e., major drainage channels and principal tributaries) for the basin, and 2) the collector system for sub-areas of the basin. The BDF value ranges from 0 (representing basins with no improved conveyance systems) to 12 (representing areas with fully effective drainage systems). The BDF reflects improvements in the drainage system itself and does not directly account for impervious cover. The BDF value is based on the following parameters: basin area, length of channel flow, development type, and land use. The BDF Factor is determined using the following equation.

$$BDF = \frac{(I*3) + (C*6)}{N+I+C} + \frac{(OS*1) + (R*1.5) + (SS_{pre1992}*3) + (SS_{post1992}*6)}{U+OS+R+SS_{pre1992} + SS_{post1992}}$$
  
Where,  
N = Length of natural channel (ft)  
I = Length of improved channel (ft)  
C = Length of concrete channel (ft)  
U = Undeveloped area (ac)  
OS = Open space graded to drain area (ac)  
R = Developed area served by roadside ditch (ac)

SS<sub>pre1992</sub> = Pre-1992 developed area served by storm sewer (ac)

 $SS_{post1992} = Post-1992$  developed area served by storm sewer (ac)

Aerial imagery was used to define the boundaries for land use throughout the study area including undeveloped areas, open spaces graded to drain, developed areas served by roadside ditch, and areas developed before and after 1992 for each of the sub-basins. Refer to **Exhibit A-1** for the watershed land use. The factors determined for Existing, CIP, and Alternative conditions for each of the subbasins are listed in **Table A1** of the **Appendix A** section of this report.

#### 3.4 Storm events

The hydrologic model for this study simulates the stormwater runoff in consideration of four (4) storm events. The storm event categories discussed within this report are in terms of percent Annual Chance Event (ACE) terminology. **Table 3.1** below relates this to the conventional annual recurrence interval nomenclature.

Table 3.1Storm Event Nomenclature

Terminology	Percent Annual Chance Event	
10-Year Storm	10% ACE	
50-Year Storm	2% ACE	
100-Year Storm	1% ACE	
500-Year Storm	0.2% ACE	

#### 3.5 Drainage basin area delineation

The sub-basin boundaries for the West Fork Chocolate Bayou, North Hayes Creek and South Hayes Creek were delineated utilizing 1-foot elevation contours generated from the TNRIS

LiDAR data sets. The boundaries followed natural watershed ridge break lines where applicable and were influenced by specific points of interest along the stream such as at major roadway crossings and stream confluences (refer to **Exhibits A-2** and **A-3** located in **Appendix A** of this report). A total of twenty-six (26) sub-basins were identified for this study: fourteen (14) for the West Fork Chocolate Bayou watershed, six (6) for the North Hayes Creek

watershed, and six (6) for the South Hayes Creek watershed.

#### 3.6 Precipitation data

Precipitation data was obtained from the Brazoria County Drainage Criteria Manual dated May 10, 2022. The study area is located within the Region 1 rainfall area of the county. The total precipitation depths corresponding to the respective storm events reflect NOAA Atlas 14 rainfall values. **Table 3.2** provides a summary of the precipitation depths utilized in this study. For this study, the rainfall depths for the NOAA Atlas 14, 24-hour duration, 10-year (10% annual chance), 50-year (2% annual chance), 100-year (1% annual chance), and 500-year (0.2% annual chance) rainfall events were used as inputs in HEC-HMS to determine the peak flows for each of the sub-basin conditions.

RETURN PERIOD	5 MIN	15 MIN	1 HOUR	2 HOUR	3 HOUR	6 HOUR	12 HOUR	1 DAY
10-YEAR (10%)	0.86	1.73	3.33	4.32	4.97	6.15	7.43	8.83
50-YEAR (2%)	1.17	2.34	4.50	6.24	7.48	9.66	11.80	14.10
100-YEAR (1%)	1.31	2.61	5.05	7.23	8.84	11.6	14.30	17.00
500-YEAR (0.2%)	1.65	3.27	6.56	9.91	12.50	17.00	21.20	25.30

	Table 3.2:	<b>Total Precipitation</b>	Depths (Inches) fo	or Brazoria	County Region 1
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The rainfall hyetographs created in HEC-HMS are based on the Type III distribution (peak center of the storm at 67%) with an intensity-duration of 5 minutes. Additionally, the total storm area is input as 0.01 square miles to calculate runoff hydrographs based on BCDCM criteria.

#### 3.7 Green and ampt loss method

This study uses the Green and Ampt loss method to calculate rainfall losses due to infiltration. This method was derived using a simplification of the comprehensive Richard's equation (1931) for unsteady water flow in soil. The parameters utilized in the methodology are:

- Initial Canopy Storage: the percentage of the canopy that is full of water at the beginning of the simulation.
- Max Canopy Storage: the maximum amount of water that can be stored in the canopy before fall-through to the surface begins (inches).
- Crop Coefficient: a ratio applied to the potential evapotranspiration when computing the amount of water to extract from the soil.

- Initial Content: the initial saturation of the soil at the beginning of the simulation (inches).
- Saturated Content: the maximum holding capacity of the soil (expressed as a volume ratio).
- Suction or Wetting Front Section: a function of the soil texture and is expressed in inches.
- Hydraulic Conductivity: the volume of water that will flow through a unit of soil in a given time (inches/hour).
- Impervious Cover: the percentage of the sub-basin which is impervious area (%).

The appropriate values have been established in the Brazoria County DCM and are referenced in **Table 3.3** below.

INTIAL CANOPY STORAGE (%)	MAX CANOPY STORAGE (IN)	CROP COEFFICIENT	INITIAL CONTENT (IN)	SATURATED CONTENT	WETTING FRONT SUCTION (IN)	HYDRAULIC CONDUCTIVITY (IN/HR)
0	0.1	1	0.075	0.46	12.45	0.024

 Table 3.3:
 Green and Ampt Loss Parameters in Brazoria County

#### 3.8 Clark's unit hydrograph method

The Clarks Unit Hydrograph Method is used to transform the excess runoff into the stormwater runoff hydrographs for each sub-basin. This method reflects two processes: 1) translation of excess runoff from its source to the outlet, and 2) attenuation of the excess rainfall due to surface storage within the drainage area. The translation and attenuation for a drainage basin, given its hydraulic conveyance characteristics, is reflected by the time of concentration (Tc) and storage coefficient (R) parameters.

The Basin Development Factor (BDF) method is used to determine the Tc and R values for each sub-basin. The BDF for a drainage area is a measure of the level of improvements made to a basin's drainage system and in turn, the basin's conveyance and runoff routing efficiency. The BDF is particularly helpful in identifying changes in the runoff response for a basin due to changes to the drainage conveyance characteristics.

When coupled with the BDF, TC and R reflect the runoff's response to drainage conveyance characteristics of the basin. The resulting TC and R values calculated for each sub-basin are presented in **Appendix A** of this report.

In general, Clark's Unit Hydrograph method is the most effective transform method for representing the ponding occurring within the subbasins of flat areas, such as Brazoria County. Clark's Unit Hydrograph method requires the time of concentration (TC) and a storage coefficient (R) for each subbasin to calculate the peak flow and create a hydrograph for each of

the storm events. For the BDF method the TC and R are based on the BDF value, as well as, adjustment factors for slope, detention and ponding within a drainage area. The following set of equations are used to determine the final TC and R parameters for Clark's Unit Hydrograph Method.

$$T_r = 10^{[(-0.05228*BDF) + 0.4028log_{10}(A) + 0.3926]}$$

$$TC_{BDF} = \left(T_r + \frac{\sqrt{A}}{2}\right)$$

$$R_{BDF} = 8.271e^{-0.1167*BDF} \ge A^{0.3856}$$

$$TC = K_s * C_f * \left(T_r + \frac{\sqrt{A}}{2}\right)$$

$$R = K_s * C_f * RM_x * (8.271e^{-0.1167*BDF} * A^{0.3856})$$
Where,  
BDF = Basin Development Factor (0 to 12, dimensionless)  
Ks = Slope factor (< 1)  
Cf = Correction factor for detention (DR > 10)  
Tr = Lag time (hr)  
TCBDF = Time of concentration based on BDF (hr)  
RBDF = Clark storage coefficient or residence time based on BDF (hr)  
A = Watershed area to point of interest (sq. mi.)  
DR = Detention rate for watershed or subwatershed (ac-ft/sq. mi.)  
RMx = Ponding factor (x=return period) for DPP ≥ 20%  
TC = Adjusted time of concentration (hr)  
R = Adjusted Clark storage coefficient or residence time (hr)  
Slope Adjustment Factor  
Ks = -0.162 ln(S \* S\_0) + 1.5232  
Detention Adjustment Factor  
RM<sub>x</sub> = C<sub>p</sub> \* DPP<sup>e</sup>  
Where,  
S = Channel slope measured along the entire watercourse (ft/mi)

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So = Overland slope, avg. of multiple representative "perpendicular" slopes (ft/mi)

DR = Detention rate (ac-ft/sq. mi)

DPP = Percentage of the watershed affected by ponding (%)

Cp, e = Ponding Calibration Coefficients (**Table 3.4**)

Table 3.4:	Ponding Adjustment Equation Coefficients per Return Period
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<b>Return Period (Years)</b>	<i>C</i> <sub>p</sub>	е
10-year	1.28	0.199
50-year	1.23	0.153
100-year	1.21	0.132
500-year	1.17	0.086

The information used to calculate the slope adjustment factor were determined for each subbasin using the elevations provided from the 2018 and 2019 LiDAR terrain data sets. To estimate the detention volumes within each subbasin, existing detention ponds were identified with the use of current aerial imagery, and 2021 Brazoria County parcel data. For each pond, the detention rate (assumed to be 0.65 ac-ft/ac based on current regulations) was multiplied by the parcel area containing the detention pond to estimate the detention volume. The sum of the detention volume of the parcels located within each subbasin is used to estimate the overall detention rate for each subbasin to calculate the detention adjustment factor.

For the study area, ponding is assumed to occur in rice fields and other low-lying depressions. To quantify the ponding adjustment factor, the areas of ponding were identified and outlined to determine their area using aerial imagery. The ponding area and the empirical ponding calibration coefficients, which are unique for each storm event frequency, are used to determine the ponding adjustment factor applied to the storage coefficient for each subbasin and storm event.

#### 3.9 Flood flow routing

The runoff hydrographs are combined and routed within the unsteady flow simulation of the HEC-RAS models. Full dynamic routing of the hydrographs is performed within the 1dimension channel sections and 2-dimensional floodplain overbank areas represented by the gridded terrain mesh. This differs from the methodology utilized in the hydrologic model data referenced in the FEMA FIS. For example, for the FEMA FIS model of the West Fork Chocolate Bayou, the hydrographs are routed within the HEC-HMS program using the Modified Puls routing methodology. The routed hydrograph is combined with other sub-basin hydrographs at specific locations along the channel to determine resulting hydrograph and peak flow at that location. For the North Hayes and South Hayes creeks, no routing is performed. Rather, the peak flows are determined using regional regression equations.

#### 3.10 Comparison of peak flows

The FEMA FIS provides a summary of the peak flows for the three streams considered in this MDP. However, a direct comparison of the FEMA flows to the MDP existing-conditions flows cannot be performed as these flows are based on different methodology for computing stormwater runoff for the watershed.

For an attempted comparison, the FEMA 1% ACE storm flows for the streams are compared to the MDP existing conditions 2% ACE storm flows. The 24-hour, 1% ACE total precipitation for pre-Atlas 14 rainfall is 13.5 inches. The Atlas 14 24-hour, 2% ACE total precipitation value is 14.1 inches. The total depth of precipitation is fairly close with a difference of 1.1 inches. **Table 3.5** provides a summary of the peak flow comparisons.

FEMA LOCATION	HEC-RAS STATION	GENERAL LOCATION	FEMA 1% ACE	MDP 2% ACE	DIFFERENCE
WEST FORK CHOCOLATE BAYOU					
CONFLUENCE WITH CHOCOLATE BAYOU	165	At Chocolate Bayou	3,734	2,923	-811
1,600 FT UPSTREAM OF CR 67	14440	Confluence with 101- 05-00	3,131	3,355	224
1,000 FT UPSTREAM OF SH 288	32138	State Highway 288	2,418	2,753	335
1,300 FT UPSTREAM OF CR 81	39472	Confluence with 101- 01-00	1,470	1,664	194
NORTH HAYES CREEK					
AT RIVER MILE 0	349	At Chocolate Bayou	1,238	1,585	347
AT RIVER MILE 1.09	6045	Confluence with Tributary	1,104	1,475	371
SOUTH HAYES CREEK					
AT RIVER MILE 1.36	7748	Confluence with Tributary	1,671	1,276	-395
AT RIVER MILE 3.43	18667	Iowa Colony Blvd	1,643	998	-645
AT RIVER MILE 3.99	21326		1,262	1,110	-152
AT RIVER MILE 5.19	27494	Confluence with Tributary	1,134	1,052	-82
AT RIVER MILE 6.03	32114	County Road 48	829	628	-201
AT RIVER MILE 7.46	37203	Upstream Limit of Detailed Study	622	300	-322

Table 3.5.Peak Flow (cfs) Comparisons

The peak flow for the existing conditions MDP is determined using the RASMapper feature in the HEC-RAS computer program. RASMapper has the ability to calculate the combined peak flow values determined across each 2D cell along a profile (i.e., cross section) alignment. Cross sections with an alignment across the floodplain were identified at locations approximating those identified in the FEMA FIS for each stream. As expected, there is a lot of variation between the peak flows. This can be attributed to the effects of the overbank storage as well as cross-basin flows leaving one watershed and contributing to the flows of another. This is clarified in **Figure 3.1** which reflects the extent of flooding within the study area and

how the floodplains for all three streams are merged at various locations. Clarification of the existing flood hazards are also shown in **Exhibit 4** through **Exhibit 8**.



Figure 3.1 2% MDP Existing Conditions Inundation Map

#### 3.11 HEC-HMS inputs and results

**Tables A1, A2** and **A3** located in **Appendix A** contain the parameters used to calculate the BDF, Tc and R values for each sub-basin considered within the study area for the Existing, CIP and Alternative project conditions. Existing conditions of the study area and the boundaries delineated for subbasins are reflected in **Exhibit A-2** located in **Appendix A**. The location of the ponds assumed in CIP can be found in **Exhibit 14**. The ponds and channel improvements for the Alternative improvement project can be found in **Exhibit 23**.
For this study, the alternatives analyses do not consider future development, based on the assumption that future development will detain to mitigate any potential impacts to the streams. Therefore, most subbasin boundaries, HEC-HMS parameters and resulting hydrographs are assumed to remain the same from existing to the CIP plan. However, the BDF factors are updated for the Alt plan to reflect the channel improvements as shown on **Exhibit A-4**. The tables in **Appendix A** show the computed parameters for the loss and transform method.

# 4.0 Hydraulic modeling

A 1D/2D unsteady flow hydraulic model was used to determine the current flood hazard and quantify the benefits of two flood reduction alternatives for Iowa Colony and ETJ. The United States Army Corps of Engineers' hydraulic modeling software HEC-RAS (version 6.3.1) was used for the 1D/2D analysis of the study area. As recommended in the May 2022 Brazoria County Drainage Criteria Manual (BCDCM), the Harris County Flood Control District's document titled Two-Dimensional Modeling Guidelines (HCFCD, July 2018) is referenced for the 1D/2D hydraulic modeling procedures and approach for documenting results.

#### 4.1 Model development

Models were created to determine the extent of flood hazards for the study area resulting from the 10-year, 50-year, 100-year and 500-year storm events for existing, CIP and alternative project conditions. The following section describes the detailed inputs, methodology, and results for the HEC-RAS 1D/2D model.

The 1D/2D modeling approach was chosen for the simulation of flood hazards due to the very flat terrain of the watershed and variable flow patterns anticipated along the overbank areas within the study area. The portion of the channels within the limits of the high banks is modeled using the 1-dimensional flow approach. This is considered acceptable since the flow path is generally known, following the alignment of the channel and contained within the high banks. The flow along the overbanks outside of the channel high banks is modeled using the 2-dimensional flow approach. Once the channel high bank is overtopped and/or breached, the water can go in many directions along the overbank.

#### 4.2 Existing conditions

The terrain created to represent existing conditions was developed from the Texas Natural Resources Information System (TNRIS) StratMap 2018 Upper Coast LiDAR data set (50 cm resolution) and supplemented with the TNRIS USGS 2019 Hurricane LiDAR data set (70 cm resolution). Both LiDAR data sets were surveyed by Fugro Geospatial, Inc. Multipoint files were projected and adjusted into Horizontal NAD83 State Plan projection and Vertical NAVD88 elevation using U.S. foot measurement. Both the hydrologic and hydraulic analysis for the study area were completed based upon this topographic data. Additional modifications were included to the terrain to account for development built between 2018, when the LiDAR was taken, and present conditions. The modifications to the terrain were input by creating surfaces in AutoCAD Civil 3D based on approved and constructed plans and merged with the 2018 and 2019 LiDAR.

There are three tributaries to Chocolate Bayou modeled in HEC-RAS including West Fork of Chocolate Bayou, North Hayes Creek and South Hayes Creek. The cross-section locations and bridge information for West Fork of Chocolate Bayou are based on the models built and updated in the approved Drainage Impact Analysis for the Phase Three Development of Meridiana, Revised December 2017 for HEC-RAS. The cross-section locations and some bridges were based on the HEC-2 FEMA models for North Hayes Creek and South Hayes Creek. However, the elevations within the cross-section are determined using the existing

LiDAR. The cross-sections were trimmed to the respective channel high banks and a uniform manning's n-value (channel roughness) of 0.050 was assumed for the natural channels.

For the unsteady flow simulation, HEC-RAS converts the cross-section geometry into a set of curves defining relationships between hydraulic parameters and stage. To define the curve for each cross section, hydraulic tabulation (Htab) parameters are needed. For the channel HTab parameters, starting elevations was set to the minimum channel elevation and increments were set to 0.1 with 200 points to calculate the rating curves for each of the cross-sections. The HTab parameters at bridges and culverts use the HEC-RAS default number of points and curves. The head water maximum elevation at each crossing structure is set to be 1.0 foot above the bridge deck elevation.

For West Fork, the inputs for the bridges and culverts were based on the updated models for the Meridiana development. However, since there were no existing HEC-RAS models for South and North Hayes Creeks, the inputs for the bridges and culverts were based on the HEC-2 models of these streams available from Brazoria County. Modifications to many of the structures were made to account for adjustments to the alignment and bridge geometry, or removed entirely based on the inspecting aerial imagery and recent maintenance reports. Additional bridges and culverts were missing from the HEC-2 models and were added using the elevations and images provided via a 2022 topographic survey. However, some bridges or culverts were not analyzed due to lack of information. **Exhibit 10** shows the location of bridges and culverts along the three streams within the study area.

Lateral structures are used within the HEC-RAS model to connect the 1D cross-sections to the 2D mesh. These structures were identified with alignments following the high banks of the channel along the edge of the cross-sections. The lateral structures are simulated to have a width of 1-ft and a weir coefficient of 0.5 (assumed to represent the transfer between the 1D and 2D domain without any major change in elevation). The 2D mesh was then created by generally outlining the subbasin areas determined in the hydrologic analysis with a maximum mesh size of 400-ft x 400-ft.

Breaklines are used along the crest of high ground features within the 2D mesh to enforce cell faces along these features and correctly direct the movement of water through the 2D domain. Breaklines were drawn and enforced along major roads, elevated areas, non-studied waterways and ponds at the highest elevations. The mesh size of 2D cells adjacent to breaklines is held to a minimum of 100-ft by 100-ft and a maximum mesh size of 300-ft by 300-ft.

The 2D boundary condition lines were established as the final step of the existing geometry. One was placed roughly covering the northern, southern, and western boundary of the project area. Along the eastern boundary where the stream outfalls are located, three boundaries were placed adjacent to the stream outfalls. Boundary conditions were drawn just upstream of the most upstream cross section of each river and the appropriate flow hydrograph was used for those boundary conditions. The 1D/2D HEC-RAS geometry for existing conditions can be found in **Exhibit B-2** of the **Appendix B** section of this report.

### 4.3 Capital improvement plan

The proposed Capital Improvement Plan conditions include the addition of nine (9) regional flood risk reduction ponds along the three streams, see **Exhibit 14**. The CIP geometry was

created by copying the existing-conditions geometry and modifying the terrain to represent the proposed ponds. Specifically, the 2D mesh was modified by removing the terrain data from within the boundaries of the proposed ponds. These areas are replaced with a storage features having stage-volume relationships. Along the border each pond, additional lateral structures were incorporated to provide a flow connection between the ponds and the 2-D mesh. No changes were made to the stormwater runoff hydrographs.

### 4.4 Alternative analysis

Alternative conditions include the ponds proposed in Capital Improvement Plan with additional channel modifications along the three main streams of the study area. The channel modifications are included to provide additional flood conveyance capacity. **Exhibit 23** provides a summary of the drainage concept for this alternative plan.

Therefore, in the geometry, cross-sections were widened to the accommodate the channelization. For West Fork, the ultimate right-of-way was assumed to be 175-feet with a bottom width of 60-ft, while in North and South Hayes the proposed right-of-way was assumed to be 150-ft, with a bottom width of about 35-ft. The bottom widths were assumed to begin 1-ft above the existing minimum elevaiton of the channel to avoid triggering environmental permiting. **Figure 4.1** shows the typical cross-section changes from existing to the proposed channel improvements implemented in the Alternative Analysis.



Figure 4.1: Typical Channel Improvement Cross-section

Adjustments were made the overbank weirs along the lateral structures and outfall pipes to reflect the extended cross-sections and widened channels. These channels were gradually reduced on the downstream end to allow for a smooth transition into the downstream unimproved conditions. The manning's n value for the channelized areas were updated to 0.04.

## 4.5 Unsteady flow data and plans

A total of five (5) plans were created for each of the geometry files analyzed, a restart file (to create stable initial conditions) and each rainfall event analyzed (10-year, 50-year, 100-year, and 500-year). A restart plan was created with each of the model geometries and an Unsteady Flow File (RST) for each of the conditions, to stabilize the model in the beginning of the run time. **Appendix B** shows the model plan settings used to run the HEC-RAS models.

#### 4.6 Manning's roughness coefficients

Manning's "n" values for the channel sections were assigned by visual inspection and assessment of available aerial imagery. Further, the existing available model data for the streams were reviewed to identify the values referenced.

Overbank "n" values within the 2D hydraulic meshes are associated with different land uses within the study area. Development of the land use dataset for association with overbank "n" values began with searching for existing land use datasets within the study area. The 2015 National Land Cover dataset (NLCD) covers the entire study area. The land cover classification was updated based on aerial imagery as needed to reflect recent development, see **Exhibit B-1**.

This analysis did not include calibration of n values. Rather, the 2D Manning's n values applied are based on the values included in *Table 3.3.1* of the *Harris County Flood Control District Two-Dimensional Modeling Guidelines*.

#### 4.7 Cross sections

Model cross sections were closely based on the alignment of the effective cross sections where applicable and truncated since only the main channel is represented as 1-dimensional. New channel cross sections were created where needed. The overbank areas are modeled as 2dimensional cells using terrain data reflecting 2018 LiDAR elevations. For developments which occurred since 2018 or are currently in progress, the LiDAR is modified to reflect final grades depicted on construction drawings.

#### 4.8 Boundary conditions

Normal depth based on the slope of the land was used for the downstream boundary condition for each of the streams for the 1D portion of the model. Sub-basin inflows were applied to the 1D portions of the model as lateral or uniform lateral inflows. Normal depth boundary conditions were applied to the 2D mesh boundaries where portions of the flow left the model system for neighboring watersheds beyond the limits of the study.

Lateral structures are used to provide a flow transition feature between the 1-dimensional crosssection elements of the model to the 2-dimensional grid mesh. The alignments for the lateral structures follow the high banks along each stream and represent the end of the 1-dimensional channel sections.

#### 4.9 Hydraulic results comparison

Profiles of the studied streams were computed, and areas of maximum inundation determined using the RASMapper feature within the HEC-RAS program.

#### Comparison of FEMA vs. MDP Existing

A direct comparison of the hydraulic results of the existing-conditions MDP flood hazards to the FEMA flood hazards is not possible since both use different methodologies for the computation of peak flows as well as water surface profiles. The flood hazards identified in the FEMA FIS utilize steady flow backwater calculations whereas the MDP utilizes unsteady flow calculations. Since the 1D/2D models were not calibrated to gauged peak flows or water surface elevation data, an attempt is made to compare the results to the FEMA 1D models to provide some validation.

For an attempted comparison, the FEMA 1% ACE flood elevations for the streams are compared to the MDP existing conditions 2% ACE flood elevations. The 2% ACE flood elevations of the MDP are used for comparison since the flood flows are based on an Atlas 14 total precipitation depth that is close to the pre-Atlas 14 1% ACE total precipitation depths referenced in the FEMA FIS. **Tables 4.1** through **4.3** provide a summary of the water surface elevation comparisons for the three streams within the study area.

FEET ABOVE CONFLUENCE WITH CHOCOLATE BAYOU	HEC-RAS STATION	GENERAL LOCATION	FEMA 1% ACE	MDP 2% ACE	DIFFERENCE
2,296	2449	Tributary Confluence	38.9	37.7	-1.2
5,350	4024		39.1	38.6	-0.5
8,145	8320	CR 63 (Future)	39.5	40.9	1.4
9,228	10945		39.9	42.4	2.5
13,112	13220	CR 67	42.4	44.1	1.7
17,689	17779	CR 64	44.9	46.2	1.3
19,848	19920		45.4	47.2	1.8
23,540	23306	Meridiana Pkwy	47.2	49.3	2.1
27,674	27070	D/S of North Canal	49.8	50.8	1.0
32,070	31011	D/S/ SH 288	51.7	52.7	1.0
35,420	33855	Tributary Confluence	53.0	54.6	1.6
38,370	37923	CR 81	53.9	55.2	1.3
40,330	39472	Tributary 101-01-00	54.3	55.5	1.2
44,440	43626	D/S CR 383	55.8	56.9	1.1
48,370	46928		57.3	57.3	0.0
50,985	50013		58.0	57.7	-0.3

 Table 4.1.
 Flood Profile Elevation (ft) Comparison (West Fork Chocolate Bayou)

FEET ABOVE CONFLUENCE WITH CHOCOLATE BAYOU	HEC-RAS STATION	GENERAL LOCATION	FEMA 1% ACE	MDP 2% ACE	DIFFERENCE
3,240	3689		37.2	35.9	-1.3
3,640	3997	Private Drive Crossing	37.2	36.1	-1.1
6,770	7159		38.7	37.5	-1.2
7,270	7607	Wooden Bridge Crossing	39.9	37.8	-2.1
10,600	11065		41.8	40.2	-1.6
13,400	13776	CR 67	43.4	41.8	-1.6
14,300	14581		44.0	42.3	-1.7
17,362	17725		44.8	43.9	-0.9
19,713	20159	CR 62	47.4	45.2	-2.2
22,410	22732	CR 63	48.2	46.3	-1.9
26,340	26405	SH 288	48.8	48.9	0.1
27,990	28169	CR 758 (future)	49.3	49.3	0.0
30,400	30742	CR 64	51.1	50.0	-1.1

 Table 4.2.
 Flood Profile Elevation (ft) Comparison (North Hayes Creek)

 Table 4.3.
 Flood Profile Elevation (ft) Comparison (South Hayes Creek)

FEET ABOVE CONFLUENCE WITH CHOCOLATE BAYOU	HEC-RAS STATION	GENERAL LOCATION	FEMA 1% ACE	MDP 2% ACE	DIFFERENCE
3,020	3380	CR 121	35.7	34.1	-1.6
6,270	6801	Tributary Confluence	37.8	37.2	-0.6
7,900	8443		38.4	38.4	0.0
9,870	10267		40.9	39.6	-1.3
11,650	12382	CR 67 (future)	42.1	41.2	-0.9
14,220	14384		43.3	42.2	-1.1
18,130	18667	CR 65	45.6	44.8	-0.8
20,880	20923		46.4	46.5	0.1
24,200	24358	SH 288	48.1	48.2	0.1
24,770	24663		48.5	48.7	0.2
28,720	29063		50.8	50.1	-0.7
30,320	30342	CR 62	51.6	50.9	-0.7
32,120	32190	CR 48	52.2	51.5	-0.7
34,810	34868	CR 382	53.6	52.7	-0.9
37,260	37203		54.6	53.4	-1.2

The comparison in the previous tables is based on the FEMA floodway data table for flood elevations without floodway and without consideration of backwater effect from Chocolate

Bayou. The results provide varying degrees of differences between computed water surface elevations for all the streams. A comparison of the extents of flooding between the two simulations is shown in **Figure 4.2**.



Figure 4.2: Flood Hazard Inundation Map Comparison

As expected, there is substantial variation in the limits of flood inundation. In the lower reach of the streams, the FEMA flood boundary includes the extent of inundation that is caused by backwater from Chocolate Bayou. In the upper reach of West Fork Chocolate Bayou, the MDP extent of flooding appears to exceed that of the FEMA floodplain. This correlates well with the increase in flood elevation referenced in **Table 4.1**. The MDP extent of flooding in the upper reaches of North Hayes Creek and South Hayes Creek appear to be less than that identified for

the FEMA floodplain. This correlates well with the decrease in flood elevations referenced in **Tables 4.2** and **4.3**.

The flood depths across the three streams vary as shown in **Figure 4.3**. This figure reflects the interaction of the flows across the stream watersheds and how the depth of flooding is represented across the 2-dimensional terrain mesh.



Figure 4.3. Typical Cross Section Across Study Area 0.2% ACE Floodplain

Based on the above, it is concluded that a direct comparison to the FEMA flood hazards is not possible. Rather, the results of the MDP modeling efforts reflect reasonable representations of the current flood hazards for the study area based on current regional drainage criteria, recently adopted precipitation, and updated terrain. This information is acceptable for assessing existing flood risks throughout the watershed and identifying the appropriate recommended master drainage plan features for the study area.

#### Comparison of Existing vs. CIP

A direct comparison of the hydraulic results of the existing-conditions MDP flood hazards to Capital Improvements Plan (CIP) flood hazards is made for the 1% ACE flood. A detailed comparison of the 1-dimensional results along the channel cross sections is presented in **Appendix B**. The change in the 1% ACE flood elevations within the 2-dimensional terrain

mesh simulation is presented in **Exhibit 18**. The results suggest that there will be minimal reduction to the maximum water surface elevations within the study area. The following **Tables 4.4** through **4.6** provide an abbreviated summary of the maximum water surface elevation along the channel at specific locations for the 1% ACE flood. Additional description of the CIP flood reduction project is presented in **Section 7.1** of this report.

FEET ABOVE CONFLUENCE WITH CHOCOLATE BAYOU	HEC-RAS STATION	GENERAL LOCATION	EXIST	СІР	DIFFERENCE
2,296	2449	Tributary Confluence	37.89	37.84	-0.05
5,350	4024		38.85	38.78	-0.07
8,145	8320	CR 63 (Future)	41.20	41.09	-0.11
9,228	10945		42.65	42.57	-0.08
13,112	13220	CR 67	44.49	44.37	-0.12
17,689	17779	CR 64	46.52	46.41	-0.11
19,848	19920		47.48	47.40	-0.08
23,540	23306	Meridiana Pkwy	49.57	49.50	-0.07
27,674	27070	D/S of North Canal	51.00	50.92	-0.08
32,070	31011	D/S/ SH 288	52.99	52.90	-0.09
35,420	33855	Tributary Confluence	54.91	54.79	-0.12
38,370	37923	CR 81	55.43	55.33	-0.10
40,330	39472	Tributary 101-01-00	55.79	55.71	-0.08
44,440	43626	D/S CR 383	57.13	57.03	-0.10
48,370	46928		57.53	57.50	-0.03
50,985	50013		57.91	57.90	-0.01

Table 4.4.	1% Annual Chance Flood Elevation (ft) – Existing vs CIP (West Fork Chocolate Bayou)
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FEET ABOVE CONFLUENCE WITH CHOCOLATE BAYOU	HEC-RAS STATION	GENERAL LOCATION	EXIST	СІР	DIFFERENCE
3,240	3689		36.40	36.11	-0.29
3,640	3997	Private Drive Crossing	36.63	36.33	-0.30
6,770	7159		38.06	37.77	-0.29
7,270	7607	Wooden Bridge Crossing	38.36	38.10	-0.26
10,600	11065		40.84	40.58	-0.26
13,400	13776	CR 67	42.29	42.12	-0.17
14,300	14581		42.67	42.56	-0.11
17,362	17725		44.17	44.10	-0.07
19,713	20159	CR 62	45.52	45.54	0.02
22,410	22732	CR 63	46.57	46.26	-0.31
26,340	26405	SH 288	49.18	49.18	0.00
27,990	28169	CR 758 (future)	49.58	49.58	0.00
30,400	30742	CR 64	50.30	50.30	0.00

Table 4.5.	1% Annual Chance	Flood Elevation (ft) -	- Existing vs CIP	(North Hayes Creek)
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 Table 4.6.
 1% Annual Chance Flood Elevation (ft) – Existing vs CIP (South Hayes Creek)

FEET ABOVE CONFLUENCE WITH CHOCOLATE BAYOU	HEC-RAS STATION	GENERAL LOCATION	EXIST	СІР	DIFFERENCE
3,020	3380	CR 121	34.26	34.13	-0.13
6,270	6801	Tributary Confluence	37.43	37.33	-0.10
7,900	8443		38.57	38.51	-0.06
9,870	10267		39.73	39.67	-0.06
11,650	12382	CR 67 (future)	41.40	41.37	-0.03
14,220	14384		42.42	42.54	0.12
18,130	18667	CR 65	45.23	45.06	-0.17
20,880	20923		46.77	46.75	-0.02
24,200	24358	SH 288	48.72	48.72	0.00
24,770	24663		49.30	49.30	0.00
28,720	29063		50.32	50.32	0.00
30,320	30342	CR 62	51.09	51.09	0.00
32,120	32190	CR 48	51.66	51.66	0.00
34,810	34868	CR 382	52.95	52.95	0.00
37,260	37203		53.75	53.75	0.00

#### Comparison of Existing vs. Alt

A direct comparison of the hydraulic results of the existing-conditions MDP flood hazards to Alternative (Alt) flood hazards is made for the 1% ACE flood. A detailed comparison of the 1-dimensional results along the channel cross sections is presented in Appendix B. The change in the 1% ACE flood elevations within the 2-dimensional terrain mesh simulation is presented in Exhibit 27. The results suggest that there will be a significant reduction in the maximum water surface elevations in the upper reaches of the study area. However, the Alt plan also results in significant increases in flood elevation in the lower reaches of the study area. The following Tables 4.7 through 4.9 provide an abbreviated summary of the maximum water surface elevation along the channel at specific locations for the 1% ACE flood. Additional description of the CIP flood reduction project is presented in Section 7.2 of this report.

FEET ABOVE CONFLUENCE WITH CHOCOLATE BAYOU	HEC-RAS STATION	GENERAL LOCATION	EXIST	ALT	DIFFERENCE
2,296	2449	Tributary Confluence	37.89	38.15	0.26
5,350	4024		38.85	39.13	0.28
8,145	8320	CR 63 (Future)	41.20	41.53	0.33
9,228	10945		42.65	42.95	0.30
13,112	13220	CR 67	44.49	44.93	0.44
17,689	17779	CR 64	46.52	46.63	0.11
19,848	19920		47.48	47.10	-0.38
23,540	23306	Meridiana Pkwy	49.57	48.61	-0.96
27,674	27070	D/S of North Canal	51.00	50.60	-0.40
32,070	31011	D/S/ SH 288	52.99	52.69	-0.30
35,420	33855	Tributary Confluence	54.91	54.63	-0.28
38,370	37923	CR 81	55.43	55.21	-0.22
40,330	39472	Tributary 101-01-00	55.79	55.63	-0.16
44,440	43626	D/S CR 383	57.13	56.79	-0.34
48,370	46928		57.53	57.34	-0.19
50,985	50013		57.91	57.96	0.05

 Table 4.7.
 1% Annual Chance Flood Elevation (ft) – Existing vs Alt (West Fork Chocolate Bayou)

FEET ABOVE CONFLUENCE WITH CHOCOLATE BAYOU	HEC-RAS STATION	GENERAL LOCATION	EXIST	ALT	DIFFERENCE
3,240	3689		36.40	36.66	0.26
3,640	3997	Private Drive Crossing	36.63	36.89	0.26
6,770	7159		38.06	38.33	0.27
7,270	7607	Wooden Bridge Crossing	38.36	38.63	0.27
10,600	11065		40.84	41.06	0.22
13,400	13776	CR 67	42.29	42.45	0.16
14,300	14581		42.67	42.73	0.06
17,362	17725		44.17	43.29	-0.88
19,713	20159	CR 62	45.52	44.58	-0.94
22,410	22732	CR 63	46.57	45.54	-1.03
26,340	26405	SH 288	49.18	47.81	-1.37
27,990	28169	CR 758 (future)	49.58	49.20	-0.38
30,400	30742	CR 64	50.30	50.28	-0.02

Table 4.8.1% Annual Chance Flood Elevation (ft) – E	Existing vs Alt (North Hayes Creek)
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Table 4.9.	1% Annual Chance Flood Elevation	(ft	) – Existing	g vs Alt	(South Ha	yes (	Creek)	
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FEET ABOVE CONFLUENCE WITH CHOCOLATE BAYOU	HEC-RAS STATION	GENERAL LOCATION	EXIST	ALT	DIFFERENCE
3,020	3380	CR 121	34.26	34.38	0.12
6,270	6801	Tributary Confluence	37.43	37.62	0.19
7,900	8443		38.57	38.66	0.09
9,870	10267		39.73	39.81	0.08
11,650	12382	CR 67 (future)	41.40	41.53	0.13
14,220	14384		42.42	42.46	0.04
18,130	18667	CR 65	45.23	44.39	-0.84
20,880	20923		46.77	45.98	-0.79
24,200	24358	SH 288	48.72	48.16	-0.56
24,770	24663		49.30	48.83	-0.47
28,720	29063		50.32	50.05	-0.27
30,320	30342	CR 62	51.09	50.77	-0.32
32,120	32190	CR 48	51.66	51.46	-0.20
34,810	34868	CR 382	52.95	52.81	-0.14
37,260	37203		53.75	53.74	-0.01

# 5.0 Existing conditions flood risk analyses

The resulting water surface elevations from the HEC-RAS 1D/2D modeling was used to identify the riverine flooding hazard for the study area. This effort resulted in maps for the 1% and 0.2% annual chance flood events. Using GIS analyses, flood exposure analyses were prepared to determine risk elements including, number of structures, length of roadway, population, and agricultural areas within the 1% and 0.2% annual chance flood hazard areas. The resulting level of service determined for the existing channel system is shown in **Exhibit 9**. **Exhibits 11** through **13** show the areas of existing inundation and the impacts to existing building, agricultural land, and roadways.

Additional GIS datasets used for the analyses included November 2021 structures dataset (manually updated to include structures constructed up to October 2022 based on satellite imagery), road centerlines from TxDOT, and 2018 LiDAR from TNRIS updated with estimated finished grading for development added since 2018. The November 2021 structures dataset from TWDB, which uses underlying TNRIS structures with duplicate structures removed and additional information including the Land use type (TNRIS), social vulnerability index (CDC), and estimated population for day and night (ORNL and TWDB), was used as a base layer, with additional structures added for development that has occurred up to October 2022. The finished floor elevation of the structure is assumed to be at natural ground based on 2018 LiDAR (Stratmap) taken at the centroid of the structure.

### 5.1 Existing conditions flood hazards

To quantify the benefits of the proposed drainage improvements, an existing conditions flood risk analysis was prepared. The results of the HEC-RAS 1D/2D analysis is used to delineate areas that would be inundated by the 100-year (1% annual chance) and 500-year (0.2% annual chance) storm events (see **Exhibit 4**).

The level-of-service for each channel segment and the overall pre-project condition was estimated by determining which storm event could be contained within the channel banks. **Exhibit 9** shows the existing conditions level-of-service for each channel segment. Overall, each of the channels failed to contain the 10-year flows for a majority of the stream and therefore the existing conditions are rated as less than a 10-year storm event capacity for the study area.

The depth of flooding at each structure for all storm events was determined by overlaying the water surface elevation and compared to the finished floor elevation assumed for the structure. The number of structures with an inundation depth determined to be at or above 1-inch were recorded, and separated by structure type. The estimated damages were also calculated using the depth-damage function assumed from the TWDB BCA Input Worksheet to calculate the total estimated damages per storm event as a baseline to determine benefits. The flooded structures are shown in **Exhibit 11**.

As part of this analysis, there are many additional benefits that may be quantified but are not easily attached to a direct monetary cost and are generally not included in the traditional BCR calculation. One of the additional benefits calculated in this study is the benefit to the population directly affected by the flood risk. The metrics used in this study to determine direct benefits relating to the population are analyzing the population directly affected at the time of the event and the community's ability to recover from the flood damages. The structure data provided by TWDB contained an estimate of the number of people residing in a structure during the day and at night. The social vulnerability index (SVI), an indicator of at-risk communities, was also attached to each of the structures in the data received from TWDB. The total number of people within all structures determined to have a flood depth greater than 1-inch were assumed to be affected. Additionally, the average SVI of all of the inundated structures for each of the storm events are compared to assess a community's ability to respond.

The study area has a significant portion of land dedicated to farming and ranching; therefore, an additional mitigation of flood risk is reducing inundated agricultural land, especially for extended periods of time. Therefore, an additional potential risk to inhabitants is quantified by calculating the amount of agricultural land inundated 6-inches of flood depth or greater in existing conditions for extreme flood events. **Exhibit 12** shows the agricultural land at risk for the extreme rainfall events in existing conditions.

Another concern when it comes to flood risk is limited accessibility by roadway. The length of inundated roadway is determined considering the maximum depth in the roadway for the extreme rainfall events in the study area to determine the impacts to the transportation and mobility. For this analysis, the roadway is assumed to be impassible when the flood depth reaches above 6-inches in the center line. The total length of road considered impassible for each of the extreme rainfall events was determined as a baseline to calculate project benefits and is shown in **Exhibit 13**. **Table 5.1** shows the existing flood risks calculated in this study.

Flood Risk	Value	
Area in 100-yr (1% annual chance) Floodplain (acres)	10,432.7	
Area in 500-yr (0.2% annual chance) Floodplain (acres)	12,528.3	
Estimated number of structures at 100-yr flood risk	1,087	
Residential Structures at 100yr flood risk	670	
Estimated Population at 100-yr flood risk	971	
Critical Facilities at 100-year flood risk (#)	1	
Number of low water crossings at flood risk (#)	20	
Estimated number of road closures (#)	N/A	
Estimated length of roads at 100-year flood risk (Miles)	23.8	
Estimated farm & ranch land at 100-year flood risk (acres)	7,929.1	
Pre-Project Level of Service	<10% ACE	

Table 5.1.	Existing Flood Risk
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# 6.0 Flood reduction goals and objectives

The results of the flood risk analyses suggested that 17.9% of all structures within the study area are at risk of flooding with depths varying from 1 inch to as a high as 48 inches. The results suggest that the three streams do not have sufficient conveyance capacity for the 10% annual chance storm event. Based on evaluation of the flood risks, goals and objectives were defined to guide the overall approach and recommendations of the drainage planning.

#### 6.1 Flood reduction goals and objectives

The goal of this MDP is to reduce the risk of structural flooding in COIC and ETJ. Based on the results of the existing conditions analysis, the following flood reduction goals and objectives were established for the plan:

- Remove 20% of existing structures from the floodplain.
- Reduce Water Surface Elevation by 0.5 ft throughout the study area.

The above goals were established as a minimum for the study realizing that limitations for implementing the appropriate drainage features to achieve the goals exist. Specifically, the recommended flood risk reduction solutions must have no negative effect on neighboring areas.

# 7.0 Flood reduction alternative analyses

Two flood reduction alternatives were considered and analyzed as part of this study. The initial approach taken was to add regional offline pond along the streams to provide additional floodplain storage capacity during major storm events. The location and extent of the ponds were coordinated with the steering committee members, being careful to avoid placement of ponds that cross existing pipeline corridors or roadways. The results showed minimal reduction in water surface elevations and highlighted the need for conveyance improvements of the streams. The second alternative identified comprised of channel conveyance improvements and ponds as mitigation for the resulting flow increases associated with the channel improvements. The channel improvements identified are based on the capacity needed to help reduce the depth of flooding within the study area by 0.5 foot. These alternatives do not consider upgrades to the capacity of the existing stream crossings.

The alternatives are described below:

Capital Improvement Plan (CIP): Off-line flood risk reduction ponds

<u>Alternative (Alt)</u>: Channel Improvements to help reduce flood depths by 0.5 foot and offline ponds as mitigation for the increase in peak flows

The alternatives are discussed in the sections below.

#### 7.1 Capital improvement plan flood reduction project

The Capital Improvement Plan (CIP) focused on providing additional storage capacity to the existing system. The project identified consists of nine flood risk reduction ponds – 4 ponds along West Fork Chocolate Bayou, 3 ponds along North Hayes Creek and 2 ponds along South Hayes Creek, see Figure 7.1 below. The pond locations are chosen based on available open space and through collaboration with the steering committee. Exhibit 14 provides an overview of the capital improvements plan drainage features. Exhibits 15 through 17 provide clarification of the areas of inundation during the storm events considered in the assessment.

With the construction of the CIP, the level of service for the three streams are improved. **Exhibit 19** provides clarification of the resulting level of service. The inundated structures, agricultural land and roadways are clarified in **Exhibits 20** through **22**.



Figure 7.1 Proposed Regional Flood Risk Reduction Ponds

The flood risk reduction ponds were strategically placed along the streams at locations where they would provide the most efficient volume, help regulate flows, and reduce impacts and minimize possible conflicts with future developments.

The depth of the ponds is based on the assumption that the outfall pipe that will connect the ponds to the adjacent channels is 1-ft above the channel flowline. The ponds are assumed to be grass lined 4:1 side slopes with 30-ft maintenance berms at the top to provide sufficient maintenance access. A trapezoidal weir is placed along the channel to divert flows into each of the basins, and the appropriate size outfall pipe is identified for each.

Stream	Basin Name	Maximum Storage Volume (ac-ft)
West Fork	WF1	527
West Fork	WF2	692
West Fork	WF3	218
West Fork	WF4	363
West Fork	WF5	199
N Hayes	NH1	103
N Hayes	NH2	124
N Hayes	NH3	159
S Hayes	SH1	967
S Hayes	SH2	1011

Table 7.1.Flood Risk Reduction Pond Volume (1% ACE).

Subsequent impact studies will need to be prepared as part of the implementation of these flood risk reduction pond projects in the future to confirm the appropriate size of the weir and outfall pipe structures.

### 7.2 Alternative analysis flood reduction project

Based on the results of Capital Improvement Plan and feedback at the Steering Committee meetings, the decision was made that Alternative would focus on channel conveyance improvements plus ponds as mitigation of the increased flows. **Exhibit 23** shows a general schematic of the Alternative drainage features considered.

Based on the existing conditions analysis, the studied streams provide a low level of service (LOS), with out of bank flooding experienced during the 10% ACE flood event. The average channel depth for all streams in the study area is approximately 6.0 feet.

The intent of the Alt plan is to widen the channels to increase the level of service to meet the 100-year event. **Exhibit D-1** shows the ultimate channel right-of-way widths that were determined. Details concerning the determination of these widths is provided in **Appendix D**.

The U.S. Fish and Wildlife Service identifies the three studied streams as having riverine habitat with wetlands. This suggests that there is a likelihood that adjustments to these stream beds would have an environmental impact. In consideration of avoiding such impacts, channel benching is being proposed. The flowline of the channel remains the same, but the sides of the channel are flattened on either side this allows the flowline and streambed to remain undisturbed, acting similar to a pilot channel, while a more uniform trapezoidal channel is constructed above it. This will avoid or limit environmental impacts to the streambed habitats.

#### 7.2.1 West Fork Chocolate Bayou

West Fork channel improvements stretch from Karsten Road (CR 383) to Manvel-Sandy Point Road (CR 67). With project channel widths ranging from 75 feet to 140 feet.

The ultimate ROW widths along West Fork Chocolate Bayou range from 240 feet to 590 feet. The improvements include the following:

•	Channel bottom width	- varies from 34 feet to 84 feet.
•	Channel depth	- varies 6 feet to 9 feet.

• Mitigation Volume – provided in 5 ponds.

#### 7.2.2 North Hayes Creek

North Hayes Creek channel improvements stretch from State Highway 288 to Manvel-Sandy Point Road (CR 67). With project channel widths ranging from 100 feet to 110 feet.

The ultimate ROW widths along North Hayes Creek range from 130 feet to 210 feet.

The improvements include the following:

- Channel bottom width 60 feet.
  Channel depth varies from 6 feet to 8 feet.
- Mitigation Volume provided in 3 ponds.

#### 7.2.3 South Hayes Creek

South Hayes Creek channel improvements stretch from State Highway 288 to Manvel-Sandy Point Road (CR 67). With project channel widths ranging from100 feet to 110 feet

The ultimate ROW widths along South Hayes Creek range from 140 feet to 250 feet.

The improvements include the following:

• Channel bottom width -34 feet

- Channel depth varies from 6 feet to 8 feet.
- Mitigation Volume provided in 2 ponds.

All channel improvements will maintain a 4 to 1 side slope, and 30ft maintenance berms on both sides of the channel. A typical section for these improvements is shown in **Figure 7.2**.



Figure 7.2 Typical Channel Improvements

**Exhibits 24** through **26** provide clarification of the areas of inundation during the storm events considered in the assessment. With the construction of the Alt, the level of service for the three streams are improved. **Exhibit 28** provides clarification of the resulting level of service. The inundated structures, agricultural land and roadways are clarified in **Exhibits 29** through **31**.

### 7.3 Proposed improvements hydraulic model (HEC-RAS)

HEC-RAS (version 6.3.1) is used to route the storm water runoff through both the CIP and Alt drainage plan features. The terrain from the existing conditions analysis is modified to reflect the proposed improvements (i.e., flood risk reduction/mitigation ponds and channel widening). Lateral structures are added to reflect the diversion weirs and outfall pipe. The model results are used to determine the volumes and elevations in the ultimate ponds. The model layouts are shown in **Exhibit B-4**. The outfall of the HEC-RAS model uses normal depth as a tail water boundary condition.

### 7.4 Proposed hydrologic modeling

The CIP plan utilizes the same hydrologic models for existing conditions. For the Alt plan, the basin development factors were revised to account for the channel improvements. These changes primarily included changes in land use to account for the mitigation ponds, and minor area changes to sub basins along West Fork Chocolate Bayou where the ponds were placed on subbasin boundaries.

# 7.5 Project costs

To properly weigh alternative viability the cost associated with the improvements must be evaluated. For each alternative the costs were evaluated on the following factors, Pond ROW, Pond Excavation, Channel ROW, and Channel Excavation, with a 20% increase in the cost to account for contingencies. The costs shown in this section only reflect the construction costs and ROW acquisition costs. For total project costs including non-constriction, engineering design and development, maintenance, and other ancillary costs, please see **Appendix F**.

#### 7.5.1 Mitigation Pond Cost

The mitigation pond cost reflects the excavation and haul off costs for the total volume excavated below existing natural ground in addition to the cost of the weir and outfall pipe.

#### 7.5.2 Channel Improvement Cost

The channel improvement costs include site preparation, excavation, haul off and turf establishment.

#### 7.5.3 ROW Acquisition Cost

The value for each parcel was based on the appraised value in HCAD multiplied by 3. Where the appraised value was not available, an estimate was made based on comparable properties nearby.

For full details see **Appendix C**. The following **Tables 7.2** through **7.4** provide a summary of the total costs for each alternative with respect to the stream.

Scenario	Mitigation	Channel Improvement	<b>ROW Acquisition</b>		25% Contingency	Total Cost
	Pona Cost	Cost	Pond	Channel		
Capitals Improvements Plan	\$13.9 M	n/a	\$16.8 M	n/a	\$7.7 M	\$38.4 M
Alternative	\$20.4 M	\$5.7 M	\$18.5 M	\$8.8 M	\$13.3 M	\$66.6 M

 Table 7.2.
 Project Cost for West Fork Chocolate Bayou

Table 7.3.Project Cost for North Hayes Creek

Scenario	Mitigation	Channel Improvement	ROW Acquisition		25% Contingency	Total Cost
	Pond Cost	Cost	Pond	Channel		
Capitals Improvements Plan	\$3.9 M	n/a	\$8.4 M	n/a	\$3.1 M	\$15.5 M
Alternative	\$3.9 M	\$2.0 M	\$8.4 M	\$4.5 M	\$4.7 M	\$23.6 M

Scenario	Mitigation Pond	Channel Improvement	ROW Acquisition		25%	Total Cost
Stenario	Cost	Cost	Pond	Channel	Contingency	Total Cost
Capitals Improvements Plan	\$20.6 M	n/a	\$13.9 M	n/a	\$8.6 M	\$43.1 M
Alternative	\$20.6 M	\$1.4 M	\$13.9 M	\$9.3 M	\$11.3 M	\$56.5 M

Table 7.4.Project Cost for South Hayes Creek

In order to quantify the cost for the additional storage volume required for the Alt plan, an average \$/acre-feet was determined from the CIP results which reflects a combination of the right-of-way acquisition and construction costs. The average cost per acre-ft was determined to be \$ 37,415/ ac-ft.

Scenario	Total Cost	Total Cost (including additional volume)
Capitals Improvements Plan	\$96.9 M	n/a
Alternative	\$146.6 M	\$221.4 M

 Table 7.5.
 Summary of Total Construction Cost (including utility adjustments and contingency)

### 7.6 **Project challenges**

The results of the Capital Improvement Plan Flood reduction project highlighted the need for additional conveyance improvements as oppossed to additional storage capacity with the use of regional ponds.

As part of the Alternative analysis, channel improvements were determined based on the an increase in the level of service with the intent of reducing flood depths by 0.5 foot. There is a significant amount of volume stored and conveyed along the channel banks which provides natural attenuation of flows. The channel improvements convey flows more efficiently resulting in increased peak discharges which need to be mitigated with the use of ponds. The existing ponds identified within the study area do not provide enough volume to fully mitigate for the increase in peak flows that result downstream of the study area. Due to issues with available ROW, the additional remaining volume required to fully mitigate the LOS improvements will likley need to be provided downstream outside of the limits of this study area (i.eoutside of the COIC and ETJ. The resulting floodplain limits and flood depths for the Alt plan can found on **Exhibits 24** through **26**. A comparison of the water surface elevations for the Existing and Alt plan is provided on **Exhibit 27**.

While the results suggest an increase in level of service as shown on **Exhibit 28**, there is an increase in peak flows at the downstream end of the study area. A comparison of the 100-year runoff hydrographs for the two alternatives and the existing conditions flood hazards was

prepared to identify the amount of additional storage volume needed to mitigate for the impacts. **Figure 7.3** shows the resulting hydrographs for the channels and overbank located with an alignment that approximates County Road 67. This is the location at the most downstream end of the proposed channel and pond improvements.



Figure 7.3 1% ACE Flow Profile at CR 67

As can be seen from **Figure 7.3**, the flow hydrograph is attenuated for Capital Improvement Plan. However, for Alternative, the flow hydrograph is increased above the existing conditions hydrograph.

The volume difference between the Alternative and existing conditions flow hydrograph was calculated. Based on this calculation, it is determined that approximately 2,000 acre-feet of additional storage volume is needed to provide full mitigation of the increases in peak storm water runoff resulting from the Alternative scenario. The inundated structures, agricultural land and roadways are shown on **Exhibits 29** through **31**.

### 7.7 Results and no adverse impact evaluation

The Texas Water Development Board (TWDB) rules defines "Negative Effect" as an increase in flood-related risks to life and property, either upstream or downstream of the proposed project. The guidance provided in Section 3.6.A of the TWDB's April 2021 Appendix C document titled Technical Guidelines for Regional Flood Planning is followed with respect to identifying the recommended regional flood plan.

The assessment of the regional flood plan effects on existing flood hazards utilizes a 1dimensional/2-dimensional unsteady flow simulation of the streams and adjacent floodplain for the study area. Following the TWDB guidance, the maximum increase of 1-dimensional water surface elevations must be less than 0.05 foot measured along the hydraulic cross section. Further, the maximum increase of the 2-dimensional water surface elevations must be less than 0.35 foot measured at each computational cell. Inundation increases exceeding these limits must not extend beyond the public right-of-way, project property, or easement. When comparing the CIP to Existing maximum water surface elevations, it is noticed that increases in water surface elevation in excess of 0.05 foot result within the channel reaches. However, these increases are contained within the channel section identified as public right-of-way and are located adjacent to proposed flood risk reduction ponds. Further, there are several questionable anomalies of water surface elevation differences within the areas outside of the channel where increases exceed 0.35 foot. These anomalies occur within areas represented by the 2-dimensional terrain mesh within the HEC-RAS simulation and mostly appear to be isolated at the west side of S.H. 288 near Shaw Road (see **Exhibit 18**). The closest plan feature to these areas is more than 0.75 mile to the west of S.H. 288. Additionally, there are areas with decreased water surface elevation surrounding each of these anomalies which suggest the issues with 2D computational mesh. These areas are not expected to experience increased water surface elevations as a result of the project.

While the Alt plan results in significant benefits in the upper reaches of the watershed, there plan suggests that there will be impacts downstream. The channel modifications will have the effect of reducing available natural storage along the streams, and the proposed ponds within the study area do not have the ability to provide sufficient volume to balance the volume losses. As referenced in Section 7.6, it is determined that approximately 2,000 acre-feet of mitigation volume will need to be created to effectively mitigate for the increases in peak discharges resulting from the Alt plan. Opportunity for providing this additional volume will need to be explored for areas outside the study area. A copy of TWDB No Negative Effect Determination Table has been included in Appendix F.

### 7.8 Cost and benefit

The proposed alternative drainage plans proposed will provide direct benefits throughout the study area. These benefits will extend to existing structures that will realize a reduced risk of flooding, as well as improvements to mobility during flood events. **Table 7.6** provides a summary of the benefits identified for each alternative. More detailed project benefits can be found in TWDB Exhibit C table format in **Appendix F**.

#### Table 7.6Project Benefits Summary

ESTIMATED PROJECT BENEFITS	EXISTING	CAPITAL IMPROVEMEN T PLAN: PONDS ONLY	ALTERNATIVE: PONDS AND CHANNEL WIDENING
Area in 100yr (1% annual chance) Floodplain (sq.mi.)	16.16	15.83	14.34
Area in 500yr (0.2% annual chance) Floodplain (sq.mi.)	19.33	19.18	18.5
Estimated number of structures at 100yr flood risk	1111	1043	875
Residential structures at 100-year flood risk	1075	1007	840
Estimated Population at 100-year flood risk	657	630	566
Critical facilities at 100-year flood risk (#)	0	0	0
Number of low water crossings at flood risk (#) <sup>1</sup>	9	8	8
Estimated number of road closures (#)	N/A	N/A	N/A
Estimated length of roads at 100-year flood risk (Miles)	25.76	24.19	19.19
Estimated farm & ranch land at 100-year flood risk (acres)	8.62	8.21	7.02
Number of structures with reduced 100yr (1% annual chance) Flood risk	-	666	956
Number of structures removed from 100yr (1% annual chance) Flood risk	-	68	236
Number of structures removed from 500yr (0.2% annual chance) Flood risk	-	63	357
Residential structures removed from 100yr (1% annual chance) Flood risk	-	68	235
Estimated Population removed from 100yr (1% annual chance) Flood risk	-	27	91
Critical facilities removed from 100yr (1% annual chance) Flood risk (#)	-	0	0
Number of low water crossings removed from 100yr (1% annual chance) Flood risk (#)	-	1	1
Estimated reduction in road closure occurrences	-	N/A	N/A
Estimated length of roads removed from 100yr flood risk (Miles)	-	1.57	6.57
Estimated farm & ranch land removed from 100yr flood risk (acres)	-	0.41	1.6
Estimated reduction in fatalities (if available)	-	N/A	N/A
Estimated reduction in injuries (if available)	-	N/A	N/A

<sup>1</sup> Represents all stream crossings that are inundated during the 100-year event

## 8.0 Benefit-Cost analysis

A benefit-cost analysis (BCA) was conducted for the CIP and Alt improvement projects to determine the value of the improvements relative to its cost. The result of the BCA is a benefit-cost-ratio (BCR) computed as the project benefits divided by its total cost over the expected life of the project. The BCR for each project is then compared to determine the most cost-effective option. The total project costs used in the BCA include non-construction costs (such as surveying, engineering design and permitting), construction costs, ROW acquisition costs and annual recurring costs such as operation and maintenance (O&M). These potential costs are estimated based on the items included in the TWDB Exhibit C cost template. For a detailed breakdown of costs, refer to **Appendix F**. The BCA method performed uses the assumptions from in the TWDB BCA Input Workbook for calculating structural damages due to riverine flooding provided by TWDB to calculate the expected project benefits over the lifetime of the project.

The expected benefits are achieved by calculating the expected damages for the baseline condition (in this case considered existing conditions) and subtracting the expected damages for the post-project condition for each of the storm event. The expected reduction of damages for each of the storm event is then multiplied by the probability of that event occurring over the life of the project to determine the expected monetary benefit for the project. In this analysis, the only benefits considered in the BCA are based on the expected damages to structures. Additional benefits quantified, but not included in the BCR, include quantifying agricultural land and length of roadway impacted for the extreme storm events. A description of the tools used, assumptions, inputs and steps for the BCA and additional benefits is provided below.

#### 8.1 Assumptions and constraints

In addition to the benefits that could be monetized, some additional benefits of the project were quantified, but not included in the BCR since a direct monetary impact was not assumed. With this in mind, there are inevitably benefits that are not reflected in the traditional BCR calculated for the two projects analyzed.

The projects were analyzed on the basis of four storm events modeled in HEC-RAS 1D/2D for Iowa Colony. Although the extent of the models reaches further than the study area boundaries, the damages to structures and other impacts were only calculated within the study boundary area. Meaning, it is possible there are additional benefits from the project in question to areas outside of the study area that are not quantified and considered in the BCR for the project. There is potential for increasing the calculated BCR if these areas were considered in a future assessment.

The workbook provided by TWDB constrained the BCA analysis to three storm events. The ability to include more storm events would provide a more accurate representation of the project benefits. Additionally, for the study area there are limited number of structures that can be considered in the workbook for the residential and commercial areas and with over 1000 homes expected to be flooded in the 500-year storm event in the study area, the number of rows in the workbook were insufficient to represent these structures. Therefore, the workbook was not used directly to calculate the BCR. Instead, the core assumptions were used in the BCA analysis performed for these projects including: the residential structure and commercial structures depth-

damage relationship (simplified from FEMA's BCA Toolkit 6.0), the project's expected lifetime (30-years), and considering project operation and maintenance costs annually.

#### 8.2 BCA general considerations

Four storm events including the 10, 50, 100 and 500-year recurrence intervals are considered for the pre-project and post-project conditions. The costs and benefits compared in the BCA included direct flood damages expected over the project life, benefit derived from the project in terms of reduced flood damage, compared to the project costs (including capital costs and annual O&M costs over the project lifetime). The expected benefits are achieved by calculating the expected damages for the baseline condition (in this case considered existing conditions) and subtracting the expected damages for the post-project condition for each of the storm event. The expected reduction of damages for each of the storm event is then multiplied by the probability of that event occurring over the life of the project to determine the expected monetary benefit for the project. In this analysis, the only benefits quantified, but not included in the BCR, include quantifying agricultural land and length of roadway impacted for the extreme storm events. A description of the tools used, assumptions, inputs and steps for the BCA and additional benefits is provided below. The summary of the BCR calculations are shown in **Table 8.1**.

Variable	CIP	Alt
Capitol Cost (Includes Design) (\$)	\$110.98 M	\$278.96 M
Operation & Maintenance Costs (\$/30 yrs)	\$8.25 M	\$18.83 M
Summary of Expected Benefits over the Project Lifetime		
Benefit to Residential Structures	\$7.32 M	\$19.77 M
Benefit to Commercial Structures	\$0.99 M	\$1.07 M
Benefit to Industrial Structures	\$0.00	\$10,868.15
Benefit to Agricultural Land	\$0.00	\$0.00
Total Expected Benefits (\$/30 yrs)	\$8.31 M	\$20.84 M
BCR	0.07	0.07

Table 8.1	<b>Benefit-Cost Ratio</b>	Calculations	(Project Life 30-vears)

The BCA for this planning study effort estimated damaged to structured based on LiDAR datasets and not on surveyed finish flood elevations. Furthermore, building foundation type was not taken into account so for communities such as mobile home parks or for foundation types with elevated floors, the assumptions are likely to overstate the damages. While a BCR of 1.0 is typically required, it is important to note that the study area includes large amounts of agricultural lands which have been removed from the floodplain, however the monetized benefits were not considered in the computation of the ratio. The ponds proposed also have the potential to be designed to be multi-purpose with amenities and recreational uses.

Since this is a planning level effort, the BCR allows for the comparison of the alternatives to determine the project most effective to be considered for more detailed study.

### 8.3 Project costs

The capital costs include the design and construction of the project (materials, labor, utility relocation and ROW acquisition). The operation and maintenance costs include the annual maintenance multiplied over 30-years to achieve the total cost of maintenance over the life of the project. For a detailed breakdown of costs for each of the projects, refer to **Appendix F**.

#### 8.4 Expected benefits to damaged structures

A damage assessment was conducted to calculate flood damage in dollars (\$) to structures, based on structure type and flood depth within the study area. The flood depth in each structure is determined by comparing the finish floor elevations to the water surface elevation for each of the storm events from the HEC-RAS analysis. A depth-damage curve is applied to determine the expected damage per flood depth based on the structure type. A sum of the total expected damages to the structures is calculated for each of the storm events. A summary of the number of structures and project damage estimated for the 100-year storm event, with the expected benefits for each of the projects in the 100-year event is shown in **Table 8.2**. The resulting expected damages and benefits calculated for all four storm events calculated can be found in **Appendix H**.

Structure Type	No. of Structures			Structural Damage		
	Existing	CIP	Alt	Existing	CIP	Alt
Commercial	35	35	34	\$6,086,273	\$5,918,050	\$5,974,494
Industrial	1	1	1	\$15,627	\$15,627	\$7,911
Residential	1075	1007	840	\$66,334,774	\$61,546,395	\$46,868,239
Critical Infrastructure	0	0	0	\$0	\$0	\$0
All Structures	1111	1043	875	\$72,436,674	\$67,480,071	\$52,850,644
Benefits for All Structures	-	68	236	-	\$4,956,603	\$19,586,030

 Table 8.2
 Benefit to Structures Effected and Damage (\$) for 100-year Storm Event

For residential damages, structure types are classified as "small", "average" or "large" home to assess damages. The structure type for the study area is assumed to be "average" which uses 2,500 sq. ft per home for the damage curve. This was determined to be the most appropriate since the average residential home was determined to be 2,000 sq. ft.

For commercial and industrial structures, the damages can be assessed based on structure value or square footage. For this analysis, an average cost/ square footage is assumed for commercial, industrial, and critical facilities.

To calculate the total benefit based on damage of all structures over the life of each project, the calculated benefit for each of the storm events is combined with the probability of that event occurring over the lifetime of the project. The total benefit is the sum of all the possible benefits multiplied by their probability which is a method prescribed by FEMA. **Table 8.3** shows an example calculation to determine the benefit for CIP.

Recurrence Interval	Benefit (\$) per Storm	Probability of Occurrence Over Project Life (%)	Benefit per Storm Over Project Life (\$/30yrs)
500-year	\$5,326,065	5.83%	\$310,467
100-year	\$4,956,603	26.03%	\$1,290,202
50-year	\$4,848,327	45.45%	\$2,203,641
10-year	\$4,703,070	95.76%	\$4,503,702
		Total Benefit over Project Life	\$8,308,011

#### Table 8.3 Benefit for Overall Project Life (30-years) Calculation for the CIP

#### 8.5 Additional Benefits Quantification

Additional benefits were calculated outside of the traditional BCR calculation. Some of which compare the existing flood risk to the reduced risk directly to the population. The total number of people within all structures determined to have a flood depth greater than 1-inch were calculated for the post- project conditions. The number of people removed from risk and the increasing average SVI from existing to post-project conditions were considered to compare benefits for each of the projects. The benefit of increased roadway accessibility was quantified for the post-project conditions. The length of road intersecting the inundation boundary for maximum depths greater than 6-inches for the existing conditions is compared to the CIP and Alternative conditions to determine the miles of roadway removed in each of the extreme flood events (100-year and 500-year). Finally, the benefit to agriculture in the study area was quantified by comparing the amount of agricultural land inundated 6-inches of flood depth or greater from existing to post-project conditions for the extreme flood events. Change in flood risk for the level-of-service, flooded structures, agricultural land and roadways can be found in **Exhibits 19** – **22** for the CIP and **Exhibits 28-31** for the Alternative Improvement Plan.

Each of these benefits were calculated for the extreme flood event and scenario. The resulting summary tables comparing the existing to the post-project conditions for each storm event can be found in **Appendix H**.

# 9.0 Recommendations and next steps

Much of the study area is undeveloped and it is expected that development will be occurring in the southern part of the city for a while. The current alternatives have considered some of these larger projects that have already begun. Since future development will be required to detain for their improvements, this master drainage study should maintain relevance for some time. That being said, as the area changes and land use changes from rural to more urban environments it is important to note that there will be a time when the master drainage study will need to be reevaluated for those future conditions and to consider what will then be different limitations in acquiring ROW.

It is important to note that the solutions presented in this report only reflect conditions as they are now and likely to be in the near future. Future developments must be required to control their own stormwater outfalls to ensure the effectiveness of this project.

The analysis of the two potential alternative projects reflects the cumulative benefits of the regional ponds and/ or channel improvements in place. However, it is anticipated that ponds will be implemented across multiple projects with a detailed drainage study prepared for each stand-alone project to quantify its benefit and demonstrate no adverse impact.

When considering the funding of the project, it may be beneficial to isolate funding of improvements by separating improvements along each reach of stream as a separate program.

It is recommended that the CIP project be considered for inclusion in the TWDB State Flood Plan. This recommendation considers the BCA and ease of implementation. In comparison to the Alt project, the CIP project has less challenges for ROW acquisition, environmental constraints and utility conflict. The BCR for both the CIP and Alt plan is 0.07.

The proposed flood risk reduction ponds in the CIP project result in the placement of ponds in the upper, mid and lower reach areas of the COIC, providing benefits for both the densely developed areas to the north and the unimproved land to the south which has a high potential of being developed in the future.

CIP plan results in the removal of 68 structures from the 100-year floodplain. CIP plan also provides the greatest reduction in acreage of farm and ranch land inundation (263 acres), and reduction in miles of roadway inundated (1.57 miles).

Any projects downstream of the study area, particularly along West Fork Chocolate Bayou would also enhance the benefits of any regional improvements implemented within the COIC. Information regarding potential funding of the recommended CIP projects is discussed in the following section.

# **10.0 Funding strategy**

Prior to the discussion of actual project costs, it must be noted that funding options, including full pass-through to developers, are possible along with various sources for direct project funding. The source that is potentially accessible for a particular project will depend upon the purpose of the project, the anticipated benefits of the project, estimated overall cost of the project, contributors, and the amount of participation by various contributors in providing project funding, and those who benefit from a particular project.

Provided that limitations on use of funds are consistent with the project of interest, potential strategies to use available funds include the following most effectively:

- Phasing of construction to spread funding needs over time
- Expanding internal funding options to use funds from sources under the control of the City of Iowa Colony
- Joint development of projects with other local and regional entities
- Joint development of projects with developers of the project
- Impact fees
- Establishing utility or special districts
- Accessing external funding to generate funds from non-City of Iowa Colony sources

These options are discussed in the following sections.

### 10.1 Project phasing and project decomposition

Large scale, expensive projects can be considered for phased construction, except if the project operation does not lend itself to phased development because of operational issues. Diversions, for example, will usually be excluded from possible phasing because of the impracticality of constructing a diversion in phases. Detention projects and channel improvements, on the other hand, are well suited to phased construction if funds are limited.

For projects to be phased the first phase should usually include ROW acquisition and environmental permitting since inability to obtain ROW or permits would render a project infeasible. For projects that could be phased, the project can be decomposed into sub-projects such that each phase is within feasible funding limits. Thus, e.g., channel improvement can be decomposed into individual reach sub-projects, with each sub-project reach composing a separate project to be built over time.

### 10.2 Developing additional internal funding

Internal funding is project funding provided by the City of Iowa Colony. This funding may be combined with money from other sources to generate the necessary money for a particular project. Internal funding may come from existing or new sources, the latter developed to supplement existing traditional sources.

Traditional sources of funding support the City of Iowa Colony general fund which can be utilized for a variety of purposes. Some traditional sources are following:

• General sales tax

- Property tax
- General license and permit fees,
- Fines and forfeitures
- Special district fees, such as industrial improvement district fees, collected from operators of industrial or commercial enterprises in specified areas in lieu of property taxes.
- Engineering/civil permits

Consideration can also be given to funds limited to specific purposes, such as the following:

- Service Improvement Fees (e.g., drainage improvement fees): These are fees that are collected for the specific purpose of generating revenue for funding of improvements for certain types of facilities (e.g., drainage systems). These fees are typically the same for each household and/or business and independent of any use levels. The authority to collect such fees can be established by ordinance.
- Drainage District Fee Assignment: These are funds collected by a drainage district for the purpose of management and operation of the drainage district system. These monies typically go directly and totally to the drainage district; however, overlap of drainage districts into the City of Iowa Colony could result in mutually beneficial use of drainage dollars.
- *Special Assessments*: These are fees charged to a particular set of individuals or business enterprises that are favorably impacted by a drainage project. Assessments can be either one-time charges or charges of short duration for the particular benefits received because of the project.
- *Department Transfers*: Funds from other operations in the City of Iowa Colony can be transferred to drainage projects if benefits to other operations can be identified.

#### 10.3 Joint and cooperative funding of projects

By combining county funds with other public agency funds for specific projects, projects that would not be otherwise built can be built using fund leveraging. Partnering with TxDOT, HGAC, TPWD, or drainage districts is an option to use funds available through these agencies.

Using cooperative arrangements, external sources can be combined with City of Iowa Colony funds for projects which benefit both the county and partners in the project.

#### **10.4** Coordination with Private Developers

Working in coordination with private developers is accomplished by having certain portions or features of a development funded by the City of Iowa Colony while the remaining portions are funded by private parties interested in implementing the project. When the public good can be demonstrated by such coordination, there is justification for city funds being used to construct certain portions of such private development. The development of regional detention systems is a prime example for this Study. The regional detention could serve many private parties as well as the public at large for reducing impacts for anticipated development, not just the current portion of the development. Another example is the acquisition of ROW for future development flow conveyance. Arrangements for City of Iowa Colony coordination with

private developments are specific to the situation, but will commonly identify portions of a project, e.g., regional detention, which benefits many parties, including the population at large, as those features in which city support may be provided. Given the low capital requirement, this option is, quite-possibly, the best alternative for the City of Iowa Colony.

# 10.5 Impact fees

Impact fees are fees assessed property developers that are used to recover anticipated costs to be incurred in the future by a county or municipal entity because of the additional municipal services (including utility) that will arise because of the development. The impact fees can also be used to recover costs already incurred by the county or municipal in project development, such as might arise, for example, from coordination with private developers in the development of project. Impact fees are commonly assessed at the time of municipal permit application and based upon amount of area to be permitted. The essential features of impact fees are that they be established by ordinance and administered in an unbiased fashion.

### 10.6 Utility or special districts

Legally defined special entities with well-defined powers, i.e., state or county created districts, can be used to generate additional revenue through taxation of several types of projects.

Drainage districts or storm water utilities can be established by ordinance for the purpose of providing drainage and/or flood control services. Drainage districts typically have a broader range of responsibilities (e.g., provision of irrigation waters) than storm water utilities, which usually restrict their services to drainage or storm water drainage related issues. The district or utility is established with authority to levy various fees, commonly based upon a surrogate defining the amount of drainage service being provided (e.g., the amount of impervious area in a land parcel because the level of imperviousness affects the amount of runoff generated). Collected revenues are dedicated to provision of drainage and flood control in the service area of the district or utility.

### 10.7 External funding

External funding sources should always be investigated as part of a particular project. If investigation of funding sources is undertaken as part of preliminary engineering, the design of the project can be modified to meet requirements of funding sources so that funds from the funding source can be accessed.

Opportunities for funding different projects depend upon where the project is located, where the benefits of the project will be realized, whom the project will benefit, and the type of project. External funding sources for flood control projects can encompass flood control ponds and channel improvements to reduced flooding. Water quality and recreational components of a project expands the options for funding from additional sources with water quality responsibilities. External funding is typically accompanied by requirements for financial participation by the entity (often termed the "local sponsor") seeking the external funding. The participation party may be a single entity, such the county, or a group of cooperating parties, such as the county, a drainage district, and a city. The following sections identify external drainage or flood control project funding sources.

### 10.8 External funding for drainage and flood control projects

The Some examples of funding sources potentially available for drainage improvement or flood control projects include:

FEMA Grants - these are grants usually administered by the Texas Water Development Board or Department of Emergency Management that are directed to prevention or response to floods.

Specific types of grants include:

- **Pre-Disaster Mitigation Grants (PDM):** This program provides grants and technical assistance to local communities for cost-effective hazard mitigation activities that complement a comprehensive hazard mitigation program to reduce injuries, loss of life, and damage and destruction of property.
- Flood Mitigation Assistance Grant (FMA): The FMA grant program provides federal funding to assist states and communities to fund cost effective measures to reduce or eliminate the long-term risk of flood damage to structures insurable under the National Flood Insurance Program (NFIP).
- **Repetitive Loss (RL) Grant Program:** This program provides grants for projects which can be shown by a benefit-cost analysis to reduce repetitive losses to residential structures

**Texas Water Development Board Loans** - The TWDB operates several loan programs for financing planning, design, construction, improvement or expansion of water and wastewater facilities. Wastewater facilities can be interpreted as to include systems that improve storm water quality. Loan programs though which such leverage might be achieved include the following:

- Clean Water State Revolving Fund (CWSRF): Using federal capitalization grants, the TWDB offers low interest loans through the Clean Water State Revolving Fund (CWSRF). CWSRF loans may be made to any political subdivision with the authority to own or operate a wastewater system to finance wastewater projects or to political subdivisions to finance nonpoint source pollution control or estuary management projects.
- **Texas Water Development Fund (DFund):** The TWDB offers through the DFund loans with interest rates at approximately 0.35 percent above the TWDB's cost of funds through the state general obligation bond-funded program. DFund loans are available for planning, design, and construction of various projects, including flood control project. Detention ponds built for flood mitigation and storm water quality improvement may qualify for loans under this program.
- State Participation Program: This program enables the TWDB to assume temporary ownership interest in a regional project when the local sponsors are unable to assume the debt for an optimally sized project.

**Amenity Funding by Texas Department of Parks and Wildlife** - Another external funding source to consider is the Texas Department of Parks and Wildlife (TDPW). Outdoor Recreation Grants are made available from the TDPW Account and the Land and Water Conservation Fund (LWCF) to local governments for the acquisition and/or development of

outdoor recreation sites. These funds are available for acquisition and development of State and local park and recreation areas adjacent to storm water detention facilities. Of the various grant programs administered by the TPWD, the following have potential to provide money for detention pond amenity development:

- **Outdoor Recreation Grants**: This program provides matching grant funds to municipalities, counties, and other local units of government with a population less than 500,000 to acquire and develop parkland or renovate existing public recreation areas.
- Indoor Recreation Facility Grants: This program provides matching funds to. municipalities, counties, and other local units of government with a population less than 500,000 for constructing recreation centers, community centers, nature centers and other facilities (buildings). Such facilities might be included as part of the amenity features for some projects.
- **Regional Grants:** This grant program provides assistance to local governments with the acquisition and development of multi-jurisdictional public recreation areas in the metropolitan areas of the state. It allows cities, counties, water districts, and other units of local government to acquire and develop parkland for both active recreation and conservation opportunities.
- **Recreational Trail Grants:** TPWD also administers the National Recreational Trails Fund in Texas for the Federal Highway Administration (FHWA). This program receives its funding from a portion of federal gas taxes paid on fuel used in non-highway recreational vehicles.

### 10.9 State administered grant programs

Different agencies in the State participate in administering various grant and loan funds made available from federal sources.

*Texas Coastal and Estuarine Land Conservation Program (TCELCP)* - Texas General Land Office (GLO) administers the TCELCP program authorized by federal Public Law 107-00 for the purpose of protecting important coastal and estuarine areas that have significant conservation, recreation, ecological, historical, or aesthetic values, or that are threatened by conversion from their natural or recreational state to other uses [GLO, 2009]. Projects are prioritized for funding by the GLO and focus upon land acquisition for conservation purposes.

*Texas Department of Rural Affairs* - the Texas Department of Rural Affairs (TDRA) provides grants for a variety of rural development purposes. Among the grant programs, TDRA sponsors grants for disaster relief (such as hurricane recovery) and rural planning activities. Some of these grant programs could provide funding for drainage improvements and flood control projects:

• **Disaster Relief and Urgent Need Fund**: Assistance available through this fund can be used for eligible relief activities in situations where the Governor of Texas has declared a state disaster or requested a federal disaster declaration.
- *Small Towns Environmental Program:* Funds in this program are used for water and sewer infrastructure improvements utilizing self-help methods such as local volunteer labor resources.
- **Disaster Recovery:** These are funds allocated to local and county entities for recovery from natural disasters, such as hurricanes, for areas designated by the Governor as a disaster area.
- *Community Development Funds:* These are funds available on a biennial basis for public facilities' development, including water and wastewater infrastructure, street and drainage improvements, housing activities, and some other limited purposes.

**U.S.** Army Corps of Engineers Project Monies - Executive Order No. 11888 (May 24, 1977) provides funds for floodplain management pursuant to the National Environmental Policy Act of 1969, the National Flood Insurance Act of 1968, and the Flood Disaster Protection Act of 1973. It directs the USACE to undertake projects to minimize the impacts of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains by acquiring, managing, and disposing of Federal lands and facilities; providing Federally undertaken, financed, or assisted construction and improvements; and conducting Federal activities and programs affecting land-use.

USACE has joint participation programs in which local governments can financially participate. This participation is by a local sponsor, which might be the City of Iowa Colony. The USACE is usually responsible for the design and construction of the projects, but the local participant assumes responsibility for the subsequent operation and maintenance of the constructed facilitates. The following are of particular interest to the authorities of the USACE.

Multi-Purpose Detention Systems to Access Other Program Funds - while the primary purpose of the sub-regional detention ponds is provision of storage to mitigate increased runoff from land development, sub-regional detention ponds are also considered as opportunities for multi-use activities that provide community amenities and become a community asset. Inclusion of community amenities as part of a detention pond system may also increase the likelihood of obtaining external grant or loan monies for the pond development.

### **11.0 Conclusion**

The work completed for this master drainage plan study resulted in the identification of two improvements projects that achieve the overall goal of flood risk reduction in the COIC.

The Capital Improvements Plan (CIP) described in Section 7.1 is recommended for consideration. The comprehensive plan provides benefit in reducing flood risk to the study area. The total cost of this plan is \$111 million and removes 68 structures from the 1% annual chance event floodplain, 1.57 miles of roadway, and 263 acres of land.

The plan assumes that future developments will incorporate their own stormwater detention pond for the anticipated increase in stormwater runoff typically associated with these developments. This follows current criteria established by Brazoria County and the communities/agencies having jurisdiction within the study area. Should developments deviate from providing stormwater runoff detention, the plan would need to be modified to ensure that future flood risks are appropriately considered.

Hydrologic and hydraulic modeling was prepared for existing conditions and each project condition. Benefit-cost-analyses were prepared to determine the most cost-effective project. The study efforts identified two projects, CIP and Alt. The CIP project consists of 9 regional ponds located in the overbanks of West Fork Chocolate Bayou, North Hayes and South Hayes intended to provide flood risk reduction benefits. The results of the CIP analysis highlighted the need for conveyance capacity in the study area – this was used to inform the concept for the second project, identified as Alt. The Alt plan included both ponds and channel conveyance improvements to increase the channel level of service.

The existing conditions floodplain mapping developed in this study should be considered for adoption by Brazoria County and other regulatory agencies. The information can be used for future and current development in the West Fork Chocolate Bayou, North Hayes Creek and South Hayes Creek watersheds. The information from this study can be used to establish Base Flood Elevations along the respective streams, representing the best available information of flood hazards for the community.

It is the intent for the Study to be incorporated into the Texas Water Development Board (TWDB) State Flood Plan. Potential funding opportunities included in the plan includes the following:

- 1. Flood Infrastructure Fund (FIF): FIF provides funding for detention, drainage, and flood control projects.
- 2. State Flood Assessment Program (SFAP): SFAP provides funding for flood risk assessment and mapping projects.
- 3. Flood Protection Planning (FPP) program: FPP provides funding for flood protection planning projects.
- 4. Drinking Water State Revolving Fund (DWSRF): DWSRF provides low-interest loans for projects that improve drinking water quality. Eligible projects include flood protection projects that enhance the reliability and safety of water supply systems.

## 12.0 List of references

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# **Exhibits**



















# LEVEL-OF-SERVICE (EXISTING)

COLONY

EXHIBIT 9

5/30/2023











📥 IOWA EXHIBIT 14 COLONY **CAPITAL IMPROVEMENTS PLAN (CIP) OVERVIEW** 

5/30/2023









## CHANGE IN WATER SURFACE ELEVATION (100-YEAR CIP VS EXISTING)

5/30/2023



























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# **Appendix A – Hydrologic Modeling Approach**
	Total Area of Subbasin	Percent impervious cover within subbasin	Length of natural channel	Length of improved channel	Length of concrete channel	Undeveloped area	Open space graded to drain	Developed area served by roadside ditch	Pre-1992 developed area served by storm sewer	Post-1992 developed area served by storm sewer	Basin Development Factor	Lag Time	Channel slope	Overland slope	Slope factor (≤1)	Detention rate for sub-basin	Detention Correction Factor (DR>10)	Percentage of the watershed affected by ponding	Adjustment factor (500- year)	Adjustment factor (100- year)	Adjustment factor (50-year)	Adjustment factor (10-year)	Adjusted Time of Concentration	Adjusted Clark Storage Coefficient (500-Year)	Adjusted Clark Storage Coefficient (100-Year)	Adjusted Clark Storage Coefficient (50-Year)	Adjusted Clark Storage Coefficient (10-Year)
Subbasin	Area	%imp	N	I	С	U	OS	R	SS (pre-1992)	SS (post-1992)	BDF	Tr	S	So	Ks	DR	Cf	DPP	RM 500	RM 100	RM 50	RM 10	тс	R 500YR	R 100YR	R 50YR	R 10YR
I.D.	(acres)	(%)	(ft)	(ft)	(ft)	(ac)	(ac)	(ac)	(ac)	(ac)		(hr)	(ft/mi)	(ft/mi)		(ac-ft/ Sq mi)		(%)					(hr)	(hr)	(hr)	(hr)	(hr)
10100A	1058.0	29	9342.0	0.0	0.0	241.6	120.6	412.2	0.0	283.7	2.3	2.3	4.1	11.7	0.9	110.1	1.3	0.0	1.0	1.0	1.0	1.0	3.3	8.7	8.7	8.7	8.7
10100B	559.8	0	7178.9	0.0	0.0	324.8	117.1	117.9	0.0	0.0	0.5	2.2	4.0	4.1	1.0	0.0	1.0	0.0	1.0	1.0	1.0	1.0	2.7	7.4	7.4	7.4	7.4
10100C	329.0	0	4745.2	0.0	0.0	328.8	0.0	0.0	0.0	0.0	0.0	1.9	1.0	13.8	1.0	0.0	1.0	0.0	1.0	1.0	1.0	1.0	2.3	6.4	6.4	6.4	6.4
10100D	1034.0	12	7375.0	0.0	0.0	463.7	441.9	110.0	0.0	18.6	0.7	2.8	3.1	5.5	1.0	7.9	1.0	0.0	1.0	1.0	1.0	1.0	3.4	9.1	9.1	9.1	9.1
10100E	681.2	19	4187.4	8098.2	0.0	428.0	118.0	88.9	0.0	46.4	2.8	1.8	6.7	12.7	0.8	27.5	1.0	0.0	1.0	1.0	1.0	1.0	1.9	4.9	4.9	4.9	4.9
10100F	1273.9	54	9167.6	0.0	0.0	375.6	156.3	104.2	0.0	638.5	3.3	2.2	1.8	6.2	1.0	240.6	2.5	0.0	1.0	1.0	1.0	1.0	7.3	18.5	18.5	18.5	18.5
10100G	1285.3	0	1786.4	4528.3	0.0	740.2	439.3	105.8	0.0	0.0	2.6	2.4	4.3	9.4	0.9	27.5	1.0	2186.5	2.3	3.3	4.0	5.9	2.9	16.6	24.5	29.3	43.4
10100H	1362.8	0	315.2	25648.3	0.0	1005.7	201.6	155.3	0.0	0.0	3.3	2.3	5.1	8.8	0.9	0.0	1.0	0.0	1.0	1.0	1.0	1.0	2.7	6.9	6.9	6.9	6.9
10101A	991.9	24	0.0	10061.6	0.0	420.5	55.7	400.2	0.0	115.5	4.4	1.7	2.9	5.2	1.0	46.8	1.0	0.0	1.0	1.0	1.0	1.0	2.4	6.0	6.0	6.0	6.0
10102A	3135.6	51	0.0	13586.2	0.0	428.1	173.4	1207.3	0.0	1327.3	6.2	2.2	5.4	7.3	0.9	186.8	1.9	0.0	1.0	1.0	1.0	1.0	5.8	12.9	12.9	12.9	12.9
10103A	2359.5	54	0.0	16363.9	0.0	808.7	243.8	34.0	0.0	1271.0	6.4	1.9	4.2	6.9	1.0	216.1	2.2	0.0	1.0	1.0	1.0	1.0	6.3	14.0	14.0	14.0	14.0
10104A	626.1	3	20.8	12288.5	0.0	486.2	23.4	116.5	0.0	0.0	3.3	1.6	6.9	6.7	0.9	0.0	1.0	0.0	1.0	1.0	1.0	1.0	1.9	5.0	5.0	5.0	5.0
10105A	1449.1	51	0.0	13987.2	0.0	675.1	55.9	69.1	0.0	649.0	5.8	1.7	4.2	6.5	1.0	173.8	1.7	0.0	1.0	1.0	1.0	1.0	4.2	9.9	9.9	9.9	9.9
10105B	1242.7	40	0.0	14921.3	0.0	204.7	380.2	208.7	0.0	449.1	5.7	1.6	4.3	9.5	0.9	168.0	1.7	0.0	1.0	1.0	1.0	1.0	3.6	8.5	8.5	8.5	8.5
10200A	1255.0	12	0.0	9178.9	0.0	219.5	184.2	0.0	0.0	851.0	7.2	1.4	5.3	6.9	0.9	276.9	3.0	8/61.9	2.6	4.0	4.9	7.8	5.9	33.7	52.9	65.1	102.8
10200B	619.0	13	2990.3	1514./	0.0	221.3	322.2	<u> </u>	0.0	20.5	1.9	2.0	3.2	6.3	1.0	13.8	1.0	0.0	1.0	1.0	1.0	1.0	2.4	0.5	0.5	0.5	0.5
10200C	/30.9	/	0.0 5710 7	7456.1	0.0	323.2	284.5	120.9	0.0	2.0	3.7	1./	3.9	0.2	1.0	17.0	1.0	3/0/.8	2.3	5.8	4.0	/.2	2.2	13.9	21.3	20.0	40.3
10200D 10200E	883.8 271.5	1	3/10./	/430.1	0.0	155.5	280.4	122.3	0.0	0.0	2.0	2.1	5.9	8.0	1.0	37.1	1.0	10913.1	2.7	4.4	3.3	8.9	2.0	18.3	<u> </u>		00.3
10200E	3/1.3	<u> </u>	3/3/.1	1600.8	0.0	48.0	280.4	42.9	0.0	0.0	0.9	1.0	5.2	6.8	0.0	0.0	1.0	20272.5	1.0	1.0	1.0	0.2	1.7	4.9	4.9	4.9	4.9
10201A 10300A	1/05.6	0	0.0	11/30.8	0.0	204.8	1110.8	97.0	0.0	0.0	1.5	$\frac{2.1}{2.2}$	<u> </u>	5.8	1.0	75.8	1.0	26426.2	2.7	4.5	5.8	9.2	2.4	22.2	36.7	46.3	76.0
10300A	1279.6	1	0.0	11355.0	0.0	826.6	357.0	95.8	0.0	0.0	3.0	2.2	4.0	8.1	1.0	0.0	1.1	0.0	1.0	1.0	1.0	1.0	2.7	69	69	69	69
10300D	1185.4	7	0.0	5596.9	0.0	512.8	535.5	120.8	0.0	16.3	3.7	2.0	7.8	4 0	1.0	29.9	1.0	26257.4	2.8	4.6	5.8	9.7	2.6	18.6	30.7	38.6	64.2
10300D	540.9	6	4289.4	1768.1	0.0	150.2	313.7	77.6	0.0	0.0	1.7	1.9	3.1	3.7	1.0	70.6	1.1	13363.8	2.6	4.2	5.3	8.5	2.5	18.3	29.2	36.3	58.4
10300E	1379.5	4	1667.3	7154.7	0.0	130.4	1148.4	100.7	0.0	0.0	3.4	2.2	4.0	4.7	1.0	21.7	1.0	41174.3	2.9	4.9	6.3	10.6	2.9	21.7	36.5	46.4	78.7
10301A	746.6	0	0.0	14254.4	0.0	117.2	538.1	91.6	0.0	0.0	3.9	1.6	5.5	5.5	1.0	17.6	1.0	45752.2	2.9	5.0	6.4	10.8	2.1	15.7	26.7	34.0	57.9

 Table A1: Basin Development Factor, Tc and R Calculations (Existing Conditions)

Table A2.Basin Development Factor, Tc and R Calculations (CIP Conditions)

	Total Area of Subbasin	Percent impervious cover within subbasin	Length of natural channel	Length of improved channel	Length of concrete channel	Undeveloped area	Open space graded to drain	Developed area served by roadside ditch	Pre-1992 developed area served by storm sewer	Post-1992 developed area served by storm sewer	Basin Development Factor	Lag Time	Channel slope	Overland slope	Slope factor (≤ 1)	Detention rate for sub-basin	Detention Correction Factor (DR>10)	Percentage of the watershed affected by ponding	Adjustment factor (500- year)	Adjustment factor (100- year)	Adjustment factor (50-year)	Adjustment factor (10-year)	Adjusted Time of Concentration	Adjusted Clark Storage Coefficient (500-Year)	Adjusted Clark Storage Coefficient (100-Year)	Adjusted Clark Storage Coefficient (50-Year)	Adjusted Clark Storage Coefficient (10-Year)
Subbasin	Area	%imp	N	I	С	U	OS	R	SS (pre-1992)	SS (post-1992)	BDF	Tr	8	So	Ks	DR	Cf	DPP	RM 500	RM 100	RM 50	RM 10	тс	R 500YR	R 100YR	R 50YR	R 10YR
I.D.	(acres)	(%)	(ft)	(ft)	(ft)	(ac)	(ac)	(ac)	(ac)	(ac)		(hr)	(ft/mi)	(ft/mi)		(ac-ft/ Sq mi)		(%)					(hr)	(hr)	(hr)	(hr)	(hr)
10100A	1058.0	29	9342.0	0.0	0.0	241.6	120.6	412.2	0.0	283.7	2.3	2.3	4.1	11.7	0.9	110.1	1.3	0.0	1.0	1.0	1.0	1.0	3.3	8.7	8.7	8.7	8.7
10100B	559.8	0	7178.9	0.0	0.0	324.8	117.1	117.9	0.0	0.0	0.5	2.2	4.0	4.1	1.0	0.0	1.0	0.0	1.0	1.0	1.0	1.0	2.7	7.4	7.4	7.4	7.4
10100C	329.0	0	4745.2	0.0	0.0	328.8	0.0	0.0	0.0	0.0	0.0	1.9	1.0	13.8	1.0	0.0	1.0	0.0	1.0	1.0	1.0	1.0	2.3	6.4	6.4	6.4	6.4
10100D	1034.0	12	7375.0	0.0	0.0	463.7	441.9	110.0	0.0	18.6	0.7	2.8	3.1	5.5	1.0	7.9	1.0	0.0	1.0	1.0	1.0	1.0	3.4	9.1	9.1	9.1	9.1
10100E	681.2	19	4187.4	8098.2	0.0	428.0	118.0	88.9	0.0	46.4	2.8	1.8	6.7	12.7	0.8	27.5	1.0	0.0	1.0	1.0	1.0	1.0	1.9	4.9	4.9	4.9	4.9
10100F	1273.9	54	9167.6	0.0	0.0	375.6	156.3	104.2	0.0	638.5	3.3	2.2	1.8	6.2	1.0	240.6	2.5	0.0	1.0	1.0	1.0	1.0	7.3	18.5	18.5	18.5	18.5
10100G	1285.3	0	1786.4	4528.3	0.0	740.2	439.3	105.8	0.0	0.0	2.6	2.4	4.3	9.4	0.9	27.5	1.0	2186.5	2.3	3.3	4.0	5.9	2.9	16.6	24.5	29.3	43.4
10100H	1362.8	0	315.2	25648.3	0.0	1005.7	201.6	155.3	0.0	0.0	3.3	2.3	5.1	8.8	0.9	0.0	1.0	0.0	1.0	1.0	1.0	1.0	2.7	6.9	6.9	6.9	6.9
10101A	991.9	24	0.0	10061.6	0.0	420.5	55.7	400.2	0.0	115.5	4.4	1.7	2.9	5.2	1.0	46.8	1.0	0.0	1.0	1.0	1.0	1.0	2.4	6.0	6.0	6.0	6.0
10102A	3135.6	51	0.0	13586.2	0.0	428.1	1/3.4	1207.3	0.0	1327.3	6.2	2.2	5.4	7.3	0.9	186.8	1.9	0.0	1.0	1.0	1.0	1.0	5.8	12.9	12.9	12.9	12.9
10103A	2359.5	54	0.0	10303.9	0.0	808.7	243.8	34.0	0.0	12/1.0	6.4	1.9	4.2	6.9	1.0	216.1	2.2	0.0	1.0	1.0	1.0	1.0	<b>6.3</b>	14.0	14.0	14.0	14.0
10104A 10105 A	020.1	51	20.8	12288.3	0.0	480.2	23.4	60.1	0.0	640.0	5.5	1.0	0.9	6.7	0.9	0.0	1.0	0.0	1.0	1.0	1.0	1.0	1.9	5.0	5.0	5.0	5.0
10105A	17427	40	0.0	14921 3	0.0	204 7	380.2	208.7	0.0	449.1	57	1.7	43	9.5	0.0	168.0	1.7	0.0	1.0	1.0	1.0	1.0	3.6	85	85	85	85
10200A	1255.0	72	0.0	9178.9	0.0	219.5	184.2	0.0	0.0	851.0	7.2	1.0	53	6.9	0.9	276.9	3.0	8761.9	2.6	4.0	4.9	7.8	5.0	33.7	52.9	65.1	102.8
10200R	619.0	13	2990.3	1514.7	0.0	221.3	322.2	55.1	0.0	20.5	1.9	2.0	3.2	6.3	1.0	13.8	1.0	0.0	1.0	1.0	1.0	1.0	2.4	6.5	6.5	6.5	6.5
10200C	730.9	7	0.0	7118.1	0.0	323.2	284.3	120.9	0.0	2.6	3.7	1.7	3.9	6.2	1.0	17.6	1.0	5767.8	2.5	3.8	4.6	7.2	2.2	13.9	21.3	26.0	40.3
10200D	883.8	1	5710.7	7456.1	0.0	153.5	609.5	122.3	0.0	0.0	2.6	2.1	3.9	8.0	1.0	37.1	1.0	16913.1	2.7	4.4	5.5	8.9	2.6	18.3	29.7	37.0	60.3
10200E	371.5	2	3737.1	0.0	0.0	48.0	280.4	42.9	0.0	0.0	0.9	1.8	5.2	15.6	0.8	0.0	1.0	0.0	1.0	1.0	1.0	1.0	1.7	4.9	4.9	4.9	4.9
10201A	717.3	1	10582.0	4609.8	0.0	71.3	550.7	97.0	0.0	0.0	1.9	2.1	5.2	6.8	0.9	0.0	1.0	20272.5	2.7	4.5	5.6	9.2	2.4	17.9	29.2	36.6	60.1
10300A	1405.6	0	0.0	11430.8	0.0	294.8	1110.8	0.0	0.0	0.0	3.8	2.2	4.0	5.8	1.0	75.8	1.1	26426.2	2.8	4.6	5.8	9.7	3.2	22.2	36.7	46.3	76.9
10300B	1279.6	1	0.0	11355.0	0.0	826.6	357.0	95.8	0.0	0.0	3.4	2.2	4.4	8.1	1.0	0.0	1.0	0.0	1.0	1.0	1.0	1.0	2.7	6.9	6.9	6.9	6.9
10300C	1185.4	7	0.0	5596.9	0.0	512.8	535.5	120.8	0.0	16.3	3.7	2.0	7.8	4.0	1.0	29.9	1.0	26257.4	2.8	4.6	5.8	9.7	2.6	18.6	30.7	38.6	64.2
10300D	540.9	6	4289.4	1768.1	0.0	150.2	313.7	77.6	0.0	0.0	1.7	1.9	3.1	3.7	1.0	70.6	1.1	13363.8	2.6	4.2	5.3	8.5	2.5	18.3	29.2	36.3	58.4
10300E	1379.5	4	1667.3	7154.7	0.0	130.4	1148.4	100.7	0.0	0.0	3.4	2.2	4.0	4.7	1.0	21.7	1.0	41174.3	2.9	4.9	6.3	10.6	2.9	21.7	36.5	46.4	78.7
10301A	746.6	0	0.0	14254.4	0.0	117.2	538.1	91.6	0.0	0.0	3.9	1.6	5.5	5.5	1.0	17.6	1.0	45752.2	2.9	5.0	6.4	10.8	2.1	15.7	26.7	34.0	57.9

 Table A3.
 Basin Development Factor, Tc and R Calculations (Alternative Conditions)

	Total Area of Subbasin	Percent impervious cover within subbasin	Length of natural channel	Length of improved channel	Length of concrete channel	Undeveloped area	Open space graded to drain	Developed area served by roadside ditch	Pre-1992 developed area served by storm sewer	Post-1992 developed area served by storm sewer	Basin Development Factor	Lag Time	Channel slope	Overland slope	Slope factor (≤ 1)	Detention rate for sub-basin	Detention Correction Factor (DR>10)	Percentage of the watershed affected by ponding	Adjustment factor (500- year)	Adjustment factor (100- year)	Adjustment factor (50-year)	Adjustment factor (10-year)	Adjusted Time of Concentration	Adjusted Clark Storage Coefficient (500-Year)	Adjusted Clark Storage Coefficient (100-Year)	Adjusted Clark Storage Coefficient (50-Year)	Adjusted Clark Storage Coefficient (10-Year)
Subbasin	Area	%imp	N	I	С	U	OS	R	SS (pre-1992)	SS (post-1992)	BDF	Tr	s	So	Ks	DR	Cf	DPP	RM 500	RM 100	RM 50	RM 10	тс	R 500YR	R 100YR	R 50YR	R 10YR
I.D.	(acres)	(%)	(ft)	(ft)	(ft)	(ac)	(ac)	(ac)	(ac)	(ac)		(hr)	(ft/mi)	(ft/mi)		(ac-ft/ Sq mi)		(%)					(hr)	(hr)	(hr)	(hr)	(hr)
10100A	1058.0	29	0.0	9342.0	0.0	241.6	120.6	412.2	0.0	283.7	5.3	1.6	4.1	11.7	0.9	110.1	1.3	0.0	1.0	1.0	1.0	1.0	2.5	6.1	6.1	6.1	6.1
10100B	559.8	0	0.0	7178.9	0.0	324.8	117.1	117.9	0.0	0.0	3.5	1.5	4.0	4.1	1.0	0.0	1.0	0.0	1.0	1.0	1.0	1.0	2.0	5.2	5.2	5.2	5.2
10100C	329.0	31	0.0	4745.2	0.0	225.3	103.5	0.0	0.0	0.0	3.3	1.3	1.0	13.8	1.0	0.0	1.0	0.0	1.0	1.0	1.0	1.0	1.6	4.4	4.4	4.4	4.4
10100D	1034.0	12	0.0	7375.0	0.0	463.7	441.9	110.0	0.0	18.6	3.7	1.9	3.1	5.5	1.0	7.9	1.0	0.0	1.0	1.0	1.0	1.0	2.5	6.4	6.4	6.4	6.4
10100E	681.2	27	0.0	12285.6	0.0	373.4	172.5	88.9	0.0	46.4	3.9	1.6	6.7	12.7	0.8	27.5	1.0	0.0	1.0	1.0	1.0	1.0	1.7	4.3	4.3	4.3	4.3
10100F	1277.2	56	0.0	9167.6	0.0	362.8	172.4	104.2	0.0	638.5	6.3	1.5	1.8	6.2	1.0	240.0	2.5	0.0	1.0	1.0	1.0	1.0	5.6	13.0	13.0	13.0	13.0
10100G	1298.0	5	0.0	6314.7	0.0	691.4	500.8	105.8	0.0	0.0	3.5	2.2	4.3	9.4	0.9	27.2	1.0	2165.1	2.3	3.3	4.0	5.9	2.6	15.0	22.1	26.4	39.2
10100H	1362.8	0	0.0	25963.5	0.0	1005.7	201.6	155.3	0.0	0.0	3.3	2.3	5.1	8.8	0.9	0.0	1.0	0.0	1.0	1.0	1.0	1.0	2.7	6.8	6.8	6.8	6.8
10101A	991.9	24	0.0	10061.6	0.0	420.5	55.7	400.2	0.0	115.5	4.4	1.7	2.9	5.2	1.0	46.8	1.0	0.0	1.0	1.0	1.0	1.0	2.4	6.0	6.0	6.0	6.0
10102A	3135.6	51	0.0	13586.2	0.0	428.1	173.4	1207.2	0.0	1327.3	6.2	2.2	5.4	7.3	0.9	186.8	1.9	0.0	1.0	1.0	1.0	1.0	5.8	12.9	12.9	12.9	12.9
10103A	2359.5	54	0.0	16363.9	0.0	808.7	243.8	34.0	0.0	1271.0	6.4	1.9	4.2	6.9	1.0	216.1	2.2	0.0	1.0	1.0	1.0	1.0	6.3	14.0	14.0	14.0	14.0
10104A	626.1	3	0.0	12309.3	0.0	486.2	23.4	116.5	0.0	0.0	3.3	1.6	6.9	6.7	0.9	0.0	1.0	0.0	1.0	1.0	1.0	1.0	1.9	5.0	5.0	5.0	5.0
10105A	1449.1	51	0.0	13987.2	0.0	0/5.1	260.5	09.1	0.0	649.0	5.8	1./	4.2	0.5	1.0	1/3.8	1./	0.0	1.0	1.0	1.0	1.0	4.2	9.9	9.9	9.9	9.9
10105D 10200A	1220.7	41	0.0	0178.0	0.0	210.5	184.2	208.7	0.0	449.1 851.0	5.0	1.0	4.5	9.5	0.9	276.0	1./	0.0 8761.0	1.0	1.0	1.0	1.0	5.0	<u>0.0</u> 22.7	0.0 52.0	0.0 65 1	0.0
10200A	610.0	12	0.0	4504.9	0.0	219.3	322.2	55.1	0.0	20.5	3.0	1.4	3.5	6.3	1.0	13.8	1.0	0.0	2.0	4.0	4.9	1.0	2.0	52	52.9	5 2	5 2
10200B	730.9	15	0.0	7118.1	0.0	259.7	347.7	120.8	0.0	20.5	3.7	1.5	3.9	6.2	1.0	17.6	1.0	5767.8	2.5	3.8	4.6	7.2	2.0	13.7	21.1	25.8	40.0
10200C	883.8	1	0.0	13166.7	0.0	153.5	609.5	120.0	0.0	0.0	3.9	1.7	3.9	8.0	1.0	37.1	1.0	16913.1	2.5	4.4	5.5	8.9	2.2	15.7	25.5	31.8	51 7
10200E	371.5	2	0.0	3737.1	0.0	48.0	280.4	42.9	0.0	0.0	3.9	1.0	5.2	15.6	0.8	0.0	1.0	0.0	1.0	1.1	1.0	1.0	1.3	3.4	3.4	3.4	3.4
10200E	717.3	14	0.0	15191.8	0.0	71.3	550.7	97.0	0.0	0.0	4.0	1.6	5.2	6.8	0.9	0.0	1.0	10689.6	2.6	4.1	5.1	8.1	2.0	13.3	21.0	26.0	41.5
10300A	1405.6	0	0.0	11430.8	0.0	294.8	1110.8	0.0	0.0	0.0	3.8	2.2	4.0	5.8	1.0	75.8	1.1	26426.2	2.8	4.6	5.8	9.7	3.2	22.2	36.7	46.3	76.9
10300B	1279.6	1	0.0	11355.0	0.0	826.6	357.0	95.8	0.0	0.0	3.4	2.2	4.4	8.1	1.0	0.0	1.0	0.0	1.0	1.0	1.0	1.0	2.7	6.9	6.9	6.9	6.9
10300C	1185.4	7	0.0	5596.9	0.0	512.8	535.5	120.8	0.0	16.3	3.7	2.0	7.8	4.0	1.0	29.9	1.0	26257.4	2.8	4.6	5.8	9.7	2.6	18.6	30.7	38.6	64.2
10300D	540.9	6	0.0	6057.5	0.0	150.2	313.7	77.6	0.0	0.0	3.8	1.5	3.1	3.7	1.0	70.6	1.1	13363.8	2.6	4.2	5.3	8.5	2.1	14.3	22.8	28.3	45.6
10300E	1379.5	11	0.0	8822.0	0.0	130.4	1148.4	100.7	0.0	0.0	3.9	2.1	4.0	4.7	1.0	21.7	1.0	36188.3	2.9	4.8	6.1	10.3	2.8	20.1	33.6	42.6	71.9
10301A	746.6	0	0.0	14254.4	0.0	117.2	538.1	91.6	0.0	0.0	3.9	1.6	5.5	5.5	1.0	17.6	1.0	45752.2	2.9	5.0	6.4	10.8	2.1	15.7	26.7	34.0	57.9









# **Appendix B – Hydraulic Modeling Approach**

## **B.1** Unsteady Flow Data and Plans

The unsteady flow data for the restart file was included as such. Figure B-1 shows the initial flow values added in the table.

点	Unsteady Flow Data -	RST			-	-		X
File	Options Help							
Deer	riation						Apply	y Dati
Desc	npuon: j							
Bou	undary Conditions Ini	tial Conditions	Meteorologica	al Data Observ	/ed Data			
Initi	al Flow Distribution Met	hod						
0	Pastart Filanama:					ि ह्य		
O I	Prior WS Filename:					đ		
				Profile:		-		
•	Enter Initial flow distrib	ution (Optional ·	- leave blank to	use boundary o	condtions)	_		
				, .	,			
-	Add RS							
		User s	pecified fixed f	lows (Optional)				
	River	Reach	RS	Initial Flow		<b></b>		
	1 N Hayes Creek	Reach 1	30961	100				
	2 N Hayes Creek	Reach 1	30742	100				
	3 N Hayes Creek	Reach 1	30356	100		_		
	4 N Hayes Creek	Reach 1	30123	100				
	5 N Hayes Creek	Reach 1	29703	100				
	6 N Hayes Creek	Reach 1	29123	100				
	7 N Hayes Creek	Reach 1	28748	100		_		
	8 N Hayes Creek	Reach 1	28652	100		_		
	9 N Hayes Creek	Reach 1	28558	100		_		
	10 N Hayes Creek	Reach 1	28513	100		_		
	11 N Hayes Creek	Reach 1	28169	100		_		
	12 N Hayes Creek	Reach 1	27721	100		_		
	13 N Hayes Creek	Reach 1	27362	100		1		
1	14 N Haves Creek	Reach 1	27197	100		<u> </u>		
	Initial Elevation of S	Storage Areas/2	D Flow Areas (	Optional)	Import Min SA Elevation(s	)		
Г	Keep initial elevation	s constant durin	ig warmup	2				
Γ	Storage Area/2D Fl	ow Area		Initial Elevation				
-	1 2D: Perimeter 1 (2)							

Figure B-1. Restart Initial Flow Input

The unsteady flow analysis typical runtime information for the restart plans is shown in Figure B-2 with the computation and tolerances for the restart files shown in Figure B-3.

 $\times$ 

左	Unsteady	Flow	Ana	lysis
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File	Options Help				
Plan:	Restart		Short ID: Res	art	
	Geometry File:	Existing_Atlas14			•
Pro	Unsteady Flow File ograms to Run	RST Plan Description			•
ব	Geometry Preprocessor Unsteady Flow Simulation Sediment Post Processor				^
	Floodplain Mapping	I			$\sim$
Sin	nulation Time Window	01JAN2022	Starting	Time:	00:00
	Ending Date:	05JAN2022	Ending T	ime:	00:00
Co Co Ma	mputation Settings mputation Interval: apping Output Interval:	10 Second 💌 Max Profile 💌	Hydrograph Output Detailed Output Inte sktop\7.19.2022\06	Interval: 1H erval: 1H 40016 HECRJ	Hour <u>–</u> Hour <u>–</u> AS\ 🖨
		,			
		Comput	te		

Figure B-2. Unsteady Flow Analysis Runtime Set Up

Item 19.

General 2D Flow Options   1D/2D Options   Advanced Tim	e Step Control	1D Mixed Flow Options	
1D Unsteady Flow Options		1D/2D Unsteady Flow Options	
Theta [implicit weighting factor] (0.6-1.0):	0.8	Number of warm up time steps (0 - 100,000):	0
Theta for warm up [implicit weighting factor] (0.6-1.0):	0.8	Time step during warm up period (hrs):	0
Water surface calculation tolerance [max=0.2](ft):	0.2	Minimum time step for time slicing (hrs):	0
Storage Area elevation tolerance [max=0.2](ft):	0.2	Maximum number of time slices:	20
Flow calculation tolerance [optional] (cfs): Max error in water surface solution (Abort Tolerance)(ft):	100.	Lateral Structure flow stability factor (1.0-3.0): Inline Structure flow stability factor (1.0-3.0):	3.
Maximum number of iterations (0-40): Maximum iterations without improvement (0-40):	40 40	Weir flow submergence decay exponent (1.0-3.0): Gate flow submergence decay exponent (1.0-3.0):	3.
		Gravity (ft/s^2):	32.174
Wind Forces		1D Numerical Solution	
Reference Frame: Eulerian	<b>•</b>	<ul> <li>Finite Difference (classic HEC-RAS methodology)</li> </ul>	
Drag Formulation: Hsu (1988)	•	Finite Difference Matrix Solver     Skyline/Gaussian (Default: faster for dendritic system     Pardiso (Optional: may be faster for large interconnec	s) cted systems)
Geometry Preprocessor Options			
Family of Rating Curves for Internal Boundaries		C Finite Volume (new approach)	
Use existing internal boundary tables when possible.     C Recompute at all internal boundaries		Number of cores to use with Pardiso solver:	Available 💌

#### Figure B-3. Restart Computation and Tolerances

The inflow for each model varied based on the hydrologic results obtain from the HEC-HMS file. **Table B-1** shows the HEC-HMS subbasin and where they are input into the HEC-RAS model.

#### Table B-1. HEC-RAS River Stations Input Locations for HEC-HMS Hydrographs

HEC-RAS River	HEC- RAS River Stat	Flow Type	HEC-HMS Subbasin
N Hayes	30948	Flow Hydrograph	10200A
N Hayes	30741	Uniform Lateral: Upstream	10200B
N Hayes	27176	Uniform Lateral: Downstream	10200B
N Hayes	26461	Uniform Lateral: Upstream	10200C
N Hayes	19383	Uniform Lateral: Downstream	10200C
N Hayes	19263	Uniform Lateral: Upstream	10200D
N Hayes	6711	Uniform Lateral: Downstream	10200D
N Hayes	6045	Lateral Inflow	10201A
N Hayes	5376	Uniform Lateral: Upstream	10200E
N Hayes	2095	Uniform Lateral: Downstream	10200E
S Hayes	37203	Uniform Lateral: Upstream/Flow Hydrograph	10300B/10300A
S Hayes	28085	Lateral Inflow/Uniform Lateral: Downstream	10301A/10300B
S Hayes	27494	Uniform Lateral: Upstream	10300C
S Hayes	24219	Uniform Lateral: Downstream	10300C
S Hayes	23735	Uniform Lateral: Upstream	10300D
S Hayes	18011	Uniform Lateral: Downstream	10300D
S Hayes	17882	Uniform Lateral: Upstream	10300E
S Hayes	3683	Uniform Lateral: Downstream	10300E
W Fork	51004	Flow Hydrograph	10100A
W Fork	50013	Uniform Lateral: Upstream	10100B
W Fork	44363	Uniform Lateral: Downstream	10100B
W Fork	44263	Uniform Lateral: Upstream	10100C
W Fork	40328	Uniform Lateral: Upstream	10100C
W Fork	39472	Uniform Lateral: Upstream/Lateral Inflow/Lateral Inflow	10100D/10101A/10102A
W Fork	32646	Uniform Lateral: Downstream	10100D
W Fork	32096	Lateral Infow	10105A
W Fork	31777	Uniform Lateral: Upstream	10100E
W Fork	23947	Uniform Lateral: Downstream	10100E
W Fork	23518	Uniform Lateral: Upstream/Lateral Inflow	10100F/10104A
W Fork	14911	Uniform Lateral: Downstream	10100F
W Fork	14440	Uniform Lateral: Upstream/Lateral Inflow	10100G/10105B
W Fork	8352	Uniform Lateral: Downstream	10100G
W Fork	8320	Uniform Lateral: Upstream	10100H
W Fork	2449	Uniform Lateral: Downstream	10100H

The runtime settings for the design storm events are identical, use of the Finite Difference method, 40 maximum iterations, and a tolerance of 500-ft was set. Figure B-4 shows the settings for 1D/2D options of the computations and tolerances options in plans.

#### HEC-RAS Unsteady Computation Options and Tolerances

General 2D Flow Options   1D/2D Options   Advanced Time	e Step Control	1D Mixed Flow Options	
1D Unsteady Flow Options		1D/2D Unsteady Flow Options	
Theta [implicit weighting factor] (0.6-1.0):	0.8	Number of warm up time steps (0 - 100,000):	0
Theta for warm up [implicit weighting factor] (0.6-1.0):	0.8	Time step during warm up period (hrs):	0
Water surface calculation tolerance [max=0.2](ft):	0.2	Minimum time step for time slicing (hrs):	0
Storage Area elevation tolerance [max=0.2](ft):	0.2	Maximum number of time slices:	20
Flow calculation tolerance [optional] (cfs): Max error in water surface solution (Abort Tolerance)(ft):	100.	Lateral Structure flow stability factor (1.0-3.0): Inline Structure flow stability factor (1.0-3.0):	3. 3.
Maximum number of iterations (0-40):	40	Weir flow submergence decay exponent (1.0-3.0):	3.
Maximum iterations without improvement (0-40):	40	Gate flow submergence decay exponent (1.0-3.0):	3.
		Gravity (ft/s^2):	32.174
Wind Forces		1D Numerical Solution	
Reference Frame: Eulerian	-	Finite Difference (dassic HEC-RAS methodology)	
Drag Formulation: Hsu (1988)	•	Finite Difference Matrix Solver	
		<ul> <li>Skyline/Gaussian (Default: faster for dendritic system</li> <li>C. Pardiso (Optional: may be faster for large interconnection)</li> </ul>	(S)
Geometry Preprocessor Options			cieu systems/
Family of Rating Curves for Internal Boundaries		C Finite Volume (new approach)	
<ul> <li>Use existing internal boundary tables when possible.</li> </ul>			
C Recompute at all internal boundaries		Number of cores to use with Pardiso solver: All	Available 💌

**Existing and Proposed Computation and Tolerances** Figure B-4.

A comparison of water surface elevation for the Existing vs. CIP and Existing vs. Alt conditions is shown on Table B-2 to B-5.

# B.2 HEC-RAS 1D/2D Results and Comparison

#### Table B-2.1D Resulting WSEL for Existing versus Capital Improvements Plan and Alternative (10-Year Storm)

River	River Station	Existing W.S. Elevation	CIP W.S. Elevation	Difference	Existing W.S. Elevation	ALT W.S. Elevation	Difference	Existing Q Total	CIP Q Total	Difference	Existing Q Total	Alt Q Total	Difference
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
W Fork	51004	57.45	57.44	-0.01	57.45	57.53	0.08	84.81	85.37	0.56	84.81	92.03	7.22
W Fork	50013	57.32	57.31	-0.01	57.32	57.37	0.05	186.87	188.19	1.32	186.87	213.59	26.72
W Fork	49293	57.22	57.20	-0.02	57.22	57.24	0.02	249.24	252.03	2.79	249.24	291.72	42.48
W Fork	48383	57.07	57.05	-0.02	57.07	57.05	-0.02	281.28	284.89	3.61	281.28	330.05	48.77
W Fork	46928	56.83	56.79	-0.04	56.83	56.71	-0.12	297.42	306.51	9.09	297.42	368.55	71.13
W Fork	46759	56.82	56.77	-0.05	56.82	56.68	-0.14	303.43	314.08	10.65	303.43	378.05	74.62
W Fork	46225	56.75	56.71	-0.04	56.75	56.56	-0.19	292.64	306.39	13.75	292.64	381.31	88.67
W Fork	45659	56.70	56.64	-0.06	56.70	56.45	-0.25	275.15	291.44	16.29	275.15	376.05	100.90
W Fork	45050	56.66	56.60	-0.06	56.66	56.35	-0.31	228.49	246.04	17.55	228.49	339.69	111.20
W Fork	44689	56.66	56.59	-0.07	56.66	56.32	-0.34	103.64	123.55	19.91	103.64	261.59	157.95
W Fork	44447	56.66	56.59	-0.07	56.66	56.32	-0.34	-50.43	-34.62	15.81	-50.43	169.30	219.73
W Fork	44363	56.66	56.59	-0.07	56.66	56.32	-0.34	-86.93	-70.91	16.02	-86.93	154.91	241.84
W Fork	44263	56.67	56.60	-0.07	56.67	56.31	-0.36	-95.61	-80.72	14.89	-95.61	154.21	249.82
W Fork	44147	56.67	56.60	-0.07	56.67	56.31	-0.36	-155.62	-137.17	18.45	-155.62	110.22	265.84
W Fork	43626	56.36	56.22	-0.14	56.36	56.04	-0.32	839.58	898.98	59.40	839.58	1203.53	363.95
W Fork	43089	56.05	55.80	-0.25	56.05	55.79	-0.26	798.68	892.64	93.96	798.68	1237.82	439.14
W Fork	42405	55.71	55.45	-0.26	55.71	55.35	-0.36	718.85	670.37	-48.48	718.85	1154.71	435.86
W Fork	41481	55.37	55.19	-0.18	55.37	55.00	-0.37	593.34	427.53	-165.81	593.34	647.02	53.68
W Fork	40328	55.05	54.84	-0.21	55.05	54.84	-0.21	635.49	714.51	79.02	635.49	564.86	-70.63
W Fork	39472	54.96	54.68	-0.28	54.96	54.74	-0.22	327.83	437.61	109.78	327.83	759.23	431.40
W Fork	38398	54.73	54.44	-0.29	54.73	54.55	-0.18	557.44	493.44	-64.00	557.44	958.81	401.37
W Fork	38222	54.70	54.42	-0.28	54.70	54.52	-0.18	494.30	443.78	-50.52	494.30	918.38	424.08
W Fork	38170	54.68	54.40	-0.28	54.68	54.49	-0.19	484.71	437.90	-46.81	484.71	858.10	373.39
W Fork	38079	54.61	54.34	-0.27	54.61	54.29	-0.32	482.17	437.51	-44.66	482.17	850.98	368.81
W Fork	38058	54.61	54.34	-0.27	54.61	54.31	-0.30	486.80	441.45	-45.35	486.80	874.28	387.48
W Fork	37923	54.58	54.31	-0.27	54.58	54.28	-0.30	491.04	441.01	-50.03	491.04	933.02	441.98
W Fork	37297	54.45	54.17	-0.28	54.45	54.14	-0.31	471.62	434.62	-37.00	471.62	1021.74	550.12
W Fork	36707	54.33	54.06	-0.27	54.33	54.01	-0.32	427.49	395.42	-32.07	427.49	977.64	550.15
W Fork	36123	54.21	53.92	-0.29	54.21	53.88	-0.33	462.87	443.44	-19.43	462.87	1051.27	588.40
W Fork	35439	54.03	53.72	-0.31	54.03	53.69	-0.34	544.05	515.67	-28.38	544.05	1118.92	574.87
W Fork	33855	53.76	53.50	-0.26	53.76	53.33	-0.43	479.54	369.29	-110.25	479.54	1228.77	749.23
W Fork	33191	53.42	53.13	-0.29	53.42	53.02	-0.40	1165.69	1123.66	-42.03	1165.69	1948.55	782.86
W Fork	32646	53.02	52.73	-0.29	53.02	52.74	-0.28	1334.10	1236.98	-97.12	1334.10	1988.85	654.75

W Fork	32138	52.71	52.45	-0.26	52.71	52.39	-0.32	1709.03	1505.85	-203.18	1709.03	2110.15	401.12
W Fork	32096	52.71	52.45	-0.26	52.71	52.41	-0.30	1709.27	1505.80	-203.47	1709.27	2117.88	408.61
W Fork	31777	52.55	52.34	-0.21	52.55	52.16	-0.39	1708.22	1504.83	-203.39	1708.22	2117.07	408.85
W Fork	31726	52.53	52.33	-0.20	52.53	52.16	-0.37	1697.72	1495.04	-202.68	1697.72	2122.41	424.69
W Fork	31011	52.17	51.98	-0.19	52.17	51.76	-0.41	1140.65	1052.86	-87.79	1140.65	1902.15	761.50
W Fork	30397	51.86	51.68	-0.18	51.86	51.34	-0.52	738.10	685.83	-52.27	738.10	1802.10	1064.00
W Fork	29875	51.61	51.42	-0.19	51.61	51.00	-0.61	821.15	778.92	-42.23	821.15	1858.35	1037.20
W Fork	29493	51.52	51.33	-0.19	51.52	50.82	-0.70	645.46	623.50	-21.96	645.46	1874.17	1228.71
W Fork	27829	50.72	50.56	-0.16	50.72	50.39	-0.33	932.92	876.39	-56.53	932.92	1787.17	854.25
W Fork	27814	50.71	50.55	-0.16	50.71	50.39	-0.32	933.84	877.37	-56.47	933.84	1762.54	828.70
W Fork	27717	50.65	50.50	-0.15	50.65	49.91	-0.74	932.42	877.22	-55.20	932.42	1762.34	829.92
W Fork	27700	50.65	50.49	-0.16	50.65	49.90	-0.75	932.53	877.34	-55.19	932.53	1789.27	856.74
W Fork	27474	50.49	50.35	-0.14	50.49	49.78	-0.71	928.98	879.90	-49.08	928.98	1709.51	780.53
W Fork	27110	50.34	50.19	-0.15	50.34	49.69	-0.65	791.72	759.80	-31.92	791.72	1515.19	723.47
W Fork	27070	50.30	50.15	-0.15	50.30	49.68	-0.62	774.53	746.32	-28.21	774.53	1476.60	702.07
W Fork	27053	50.24	50.09	-0.15	50.24	49.10	-1.14	773.31	744.63	-28.68	773.31	1472.04	698.73
W Fork	27004	50.22	50.06	-0.16	50.22	49.07	-1.15	819.14	793.56	-25.58	819.14	1457.36	638.22
W Fork	26409	49.90	49.74	-0.16	49.90	48.87	-1.03	934.41	909.75	-24.66	934.41	1292.52	358.11
W Fork	25744	49.64	49.46	-0.18	49.64	48.64	-1.00	840.09	830.80	-9.29	840.09	1281.03	440.94
W Fork	24706	49.37	49.18	-0.19	49.37	48.35	-1.02	812.94	777.53	-35.41	812.94	1070.97	258.03
W Fork	24589	49.31	49.12	-0.19	49.31	48.33	-0.98	809.35	774.88	-34.47	809.35	1069.24	259.89
W Fork	24122	49.13	48.93	-0.20	49.13	48.19	-0.94	851.18	807.74	-43.44	851.18	1398.89	547.71
W Fork	23947	49.04	48.85	-0.19	49.04	48.10	-0.94	847.06	799.76	-47.30	847.06	1717.50	870.44
W Fork	23604	48.87	48.69	-0.18	48.87	47.84	-1.03	1063.40	1003.29	-60.11	1063.40	1918.94	855.54
W Fork	23518	48.82	48.64	-0.18	48.82	47.78	-1.04	1105.17	1046.49	-58.68	1105.17	1909.92	804.75
W Fork	23373	48.75	48.57	-0.18	48.75	47.30	-1.45	1105.14	1046.48	-58.66	1105.14	1907.62	802.48
W Fork	23306	48.71	48.53	-0.18	48.71	47.19	-1.52	1081.56	1026.17	-55.39	1081.56	1887.25	805.69
W Fork	22672	48.10	47.93	-0.17	48.10	46.34	-1.76	1077.96	1019.21	-58.75	1077.96	2071.75	993.79
W Fork	22162	47.74	47.57	-0.17	47.74	46.17	-1.57	1273.81	1216.96	-56.85	1273.81	2154.49	880.68
W Fork	21791	47.51	47.33	-0.18	47.51	46.06	-1.45	1153.26	1133.18	-20.08	1153.26	2168.27	1015.01
W Fork	21283	47.32	47.13	-0.19	47.32	45.86	-1.46	987.46	976.65	-10.81	987.46	2250.12	1262.66
W Fork	20513	46.85	46.65	-0.20	46.85	45.61	-1.24	1276.92	1212.51	-64.41	1276.92	2069.04	792.12
W Fork	19920	46.49	46.29	-0.20	46.49	45.46	-1.03	1107.98	1061.14	-46.84	1107.98	2130.36	1022.38
W Fork	19519	46.34	46.13	-0.21	46.34	45.37	-0.97	1076.87	1033.74	-43.13	1076.87	2041.26	964.39
W Fork	19452	46.37	46.16	-0.21	46.37	45.38	-0.99	918.75	881.27	-37.48	918.75	2019.35	1100.60
W Fork	19439	46.36	46.15	-0.21	46.36	45.37	-0.99	851.64	816.43	-35.21	851.64	2005.29	1153.65
W Fork	19366	46.32	46.11	-0.21	46.32	45.36	-0.96	852.84	817.75	-35.09	852.84	1985.18	1132.34
W Fork	18605	45.99	45.78	-0.21	45.99	45.21	-0.78	844.42	809.39	-35.03	844.42	1869.60	1025.18
W Fork	17779	45.43	45.21	-0.22	45.43	45.05	-0.38	1068.96	1058.09	-10.87	1068.96	2006.91	937.95
W Fork	17721	45.39	45.16	-0.23	45.39	45.06	-0.33	1119.37	1123.44	4.07	1119.37	1903.72	784.35
W Fork	17656	45.23	44.99	-0.24	45.23	44.42	-0.81	1118.06	1123.30	5.24	1118.06	1891.80	773.74

W Fork	17575	45.18	44.94	-0.24	45.18	44.39	-0.79	1131.72	1140.33	8.61	1131.72	2020.43	888.71
W Fork	16646	44.76	44.49	-0.27	44.76	44.21	-0.55	1231.59	1068.13	-163.46	1231.59	1846.21	614.62
W Fork	15846	44.38	44.17	-0.21	44.38	44.14	-0.24	1096.85	952.12	-144.73	1096.85	1487.01	390.16
W Fork	15394	44.12	43.96	-0.16	44.12	44.12	0.00	1102.21	968.87	-133.34	1102.21	1395.13	292.92
W Fork	14911	43.95	43.76	-0.19	43.95	44.10	0.15	908.34	922.69	14.35	908.34	1124.00	215.66
W Fork	14440	43.80	43.60	-0.20	43.80	44.06	0.26	951.86	960.10	8.24	951.86	969.81	17.95
W Fork	13933	43.63	43.32	-0.31	43.63	43.98	0.35	1035.22	1256.28	221.06	1035.22	1054.44	19.22
W Fork	13771	43.59	43.22	-0.37	43.59	43.96	0.37	1022.12	1261.88	239.76	1022.12	1019.13	-2.99
W Fork	13736	43.57	43.20	-0.37	43.57	43.96	0.39	1018.43	1257.12	238.69	1018.43	1021.09	2.66
W Fork	13713	43.52	43.09	-0.43	43.52	43.91	0.39	1018.40	1256.65	238.25	1018.40	1020.76	2.36
W Fork	13680	43.51	43.09	-0.42	43.51	43.91	0.40	1050.53	1261.63	211.10	1050.53	1051.30	0.77
W Fork	13220	43.25	42.81	-0.44	43.25	43.75	0.50	1408.41	1377.93	-30.48	1408.41	1721.47	313.06
W Fork	12944	43.09	42.69	-0.40	43.09	43.61	0.52	1540.45	1349.00	-191.45	1540.45	1792.37	251.92
W Fork	12854	43.05	42.64	-0.41	43.05	43.61	0.56	1447.80	1303.05	-144.75	1447.80	1609.86	162.06
W Fork	12769	42.80	42.43	-0.37	42.80	43.22	0.42	1447.37	1301.31	-146.06	1447.37	1607.76	160.39
W Fork	12703	42.66	42.30	-0.36	42.66	43.07	0.41	1443.01	1300.60	-142.41	1443.01	1606.34	163.33
W Fork	12244	42.38	42.01	-0.37	42.38	42.77	0.39	1135.78	1024.19	-111.59	1135.78	1256.82	121.04
W Fork	11115	41.64	41.29	-0.35	41.64	41.92	0.28	1146.32	1045.04	-101.28	1146.32	1225.77	79.45
W Fork	11040	41.63	41.28	-0.35	41.63	41.91	0.28	1247.97	1134.85	-113.12	1247.97	1348.91	100.94
W Fork	10968	41.61	41.26	-0.35	41.61	41.89	0.28	1303.54	1180.68	-122.86	1303.54	1407.42	103.88
W Fork	10945	41.59	41.24	-0.35	41.59	41.88	0.29	1304.00	1179.11	-124.89	1304.00	1410.71	106.71
W Fork	9364	40.92	40.56	-0.36	40.92	41.19	0.27	1055.34	978.86	-76.48	1055.34	1164.36	109.02
W Fork	8384	40.35	40.06	-0.29	40.35	40.67	0.32	1291.23	939.77	-351.46	1291.23	1405.82	114.59
W Fork	8352	40.32	40.07	-0.25	40.32	40.67	0.35	1316.85	844.90	-471.95	1316.85	1380.78	63.93
W Fork	8320	40.22	40.03	-0.19	40.22	40.52	0.30	1316.82	838.40	-478.42	1316.82	1380.17	63.35
W Fork	8282	40.20	39.91	-0.29	40.20	40.51	0.31	1315.34	1240.64	-74.70	1315.34	1419.80	104.46
W Fork	7427	39.80	39.50	-0.30	39.80	40.08	0.28	1048.57	983.46	-65.11	1048.57	1135.18	86.61
W Fork	6777	39.49	39.19	-0.30	39.49	39.77	0.28	1126.86	1069.06	-57.80	1126.86	1168.41	41.55
W Fork	6131	39.14	38.85	-0.29	39.14	39.45	0.31	1288.07	1190.11	-97.96	1288.07	1302.16	14.09
W Fork	5494	38.80	38.53	-0.27	38.80	39.08	0.28	1339.16	1239.54	-99.62	1339.16	1461.75	122.59
W Fork	5087	38.60	38.34	-0.26	38.60	38.83	0.23	1285.33	1186.28	-99.05	1285.33	1477.71	192.38
W Fork	4024	38.09	37.84	-0.25	38.09	38.33	0.24	1134.04	1069.80	-64.24	1134.04	1211.89	77.85
W Fork	2968	37.51	37.28	-0.23	37.51	37.72	0.21	1265.55	1163.26	-102.29	1265.55	1362.80	97.25
W Fork	2449	37.26	37.06	-0.20	37.26	37.45	0.19	1317.61	1190.75	-126.86	1317.61	1429.34	111.73
W Fork	1392	36.95	36.78	-0.17	36.95	37.12	0.17	1180.68	1101.43	-79.25	1180.68	1256.45	75.77
W Fork	165	36.73	36.56	-0.17	36.73	36.89	0.16	960.18	923.36	-36.82	960.18	994.43	34.25
S Hayes	37203	52.51	52.51	0.00	52.51	52.39	-0.12	67.26	67.25	-0.01	67.26	70.71	3.45
S Hayes	36329	52.38	52.38	0.00	52.38	52.23	-0.15	62.71	62.65	-0.06	62.71	65.38	2.67
S Hayes	34868	52.05	52.05	0.00	52.05	51.82	-0.23	190.23	190.24	0.01	190.23	193.67	3.44
S Hayes	34779	52.04	52.04	0.00	52.04	51.80	-0.24	197.54	197.54	0.00	197.54	200.35	2.81
S Hayes	34618	51.97	51.97	0.00	51.97	51.74	-0.23	197.54	197.54	0.00	197.54	200.06	2.52

S Hayes	34512	51.92	51.92	0.00	51.92	51.67	-0.25	198.42	198.41	-0.01	198.42	197.91	-0.51
S Hayes	34331	51.81	51.81	0.00	51.81	51.57	-0.24	214.98	214.98	0.00	214.98	202.70	-12.28
S Hayes	33541	51.41	51.41	0.00	51.41	51.17	-0.24	258.09	258.04	-0.05	258.09	217.95	-40.14
S Hayes	32687	51.03	51.03	0.00	51.03	50.84	-0.19	257.11	257.19	0.08	257.11	247.57	-9.54
S Hayes	32190	50.88	50.88	0.00	50.88	50.70	-0.18	243.57	243.63	0.06	243.57	290.04	46.47
S Hayes	32114	50.87	50.87	0.00	50.87	50.68	-0.19	250.42	250.48	0.06	250.42	288.55	38.13
S Hayes	31903	50.71	50.71	0.00	50.71	50.46	-0.25	250.42	250.49	0.07	250.42	287.71	37.29
S Hayes	31806	50.67	50.67	0.00	50.67	50.43	-0.24	260.21	260.28	0.07	260.21	320.76	60.55
S Hayes	31054	50.48	50.48	0.00	50.48	50.25	-0.23	283.80	283.86	0.06	283.80	300.27	16.47
S Hayes	30342	50.26	50.26	0.00	50.26	50.05	-0.21	339.52	339.55	0.03	339.52	336.78	-2.74
S Hayes	30248	50.25	50.25	0.00	50.25	50.05	-0.20	348.78	348.81	0.03	348.78	301.75	-47.03
S Hayes	30101	50.03	50.03	0.00	50.03	49.87	-0.16	348.77	348.81	0.04	348.77	301.52	-47.25
S Hayes	30007	49.99	49.99	0.00	49.99	49.85	-0.14	355.16	355.21	0.05	355.16	349.91	-5.25
S Hayes	29429	49.81	49.81	0.00	49.81	49.70	-0.11	372.16	372.19	0.03	372.16	389.32	17.16
S Hayes	29291	49.76	49.76	0.00	49.76	49.66	-0.10	381.26	381.26	0.00	381.26	386.29	5.03
S Hayes	29262	49.76	49.76	0.00	49.76	49.65	-0.11	383.44	383.54	0.10	383.44	382.46	-0.98
S Hayes	29140	49.50	49.50	0.00	49.50	49.39	-0.11	376.27	376.41	0.14	376.27	381.43	5.16
S Hayes	29063	49.48	49.48	0.00	49.48	49.35	-0.13	377.48	377.47	-0.01	377.48	394.45	16.97
S Hayes	28680	49.31	49.31	0.00	49.31	49.17	-0.14	392.50	392.82	0.32	392.50	413.01	20.51
S Hayes	28085	49.06	49.06	0.00	49.06	48.87	-0.19	427.05	427.19	0.14	427.05	458.35	31.30
S Hayes	27494	48.85	48.85	0.00	48.85	48.65	-0.20	454.55	455.16	0.61	454.55	446.29	-8.26
S Hayes	27067	48.70	48.70	0.00	48.70	48.46	-0.24	472.27	472.89	0.62	472.27	516.90	44.63
S Hayes	26377	48.39	48.39	0.00	48.39	48.14	-0.25	454.22	454.40	0.18	454.22	476.16	21.94
S Hayes	25799	48.13	48.13	0.00	48.13	47.71	-0.42	434.80	435.64	0.84	434.80	591.34	156.54
S Hayes	24663	47.59	47.58	-0.01	47.59	46.35	-1.24	508.34	509.25	0.91	508.34	641.36	133.02
S Hayes	24358	47.32	47.31	-0.01	47.32	45.66	-1.66	595.14	595.29	0.15	595.14	643.61	48.47
S Hayes	24279	47.29	47.28	-0.01	47.29	45.47	-1.82	594.98	595.14	0.16	594.98	654.42	59.44
S Hayes	23735	47.26	47.25	-0.01	47.26	45.31	-1.95	594.92	595.07	0.15	594.92	654.42	59.50
S Hayes	23636	47.18	47.17	-0.01	47.18	45.23	-1.95	612.11	612.64	0.53	612.11	717.40	105.29
S Hayes	23016	46.83	46.81	-0.02	46.83	44.84	-1.99	555.53	558.49	2.96	555.53	717.34	161.81
S Hayes	22457	46.52	46.50	-0.02	46.52	44.56	-1.96	547.82	552.12	4.30	547.82	717.30	169.48
S Hayes	22221	46.41	46.38	-0.03	46.41	44.47	-1.94	547.49	551.48	3.99	547.49	717.27	169.78
S Hayes	21326	45.89	45.83	-0.06	45.89	44.14	-1.75	543.17	553.47	10.30	543.17	717.24	174.07
S Hayes	20923	45.55	45.46	-0.09	45.55	44.00	-1.55	586.31	594.94	8.63	586.31	717.21	130.90
S Hayes	20417	45.18	45.08	-0.10	45.18	43.77	-1.41	582.33	585.38	3.05	582.33	717.20	134.87
S Hayes	19676	44.65	44.52	-0.13	44.65	43.37	-1.28	610.01	617.20	7.19	610.01	717.19	107.18
S Hayes	19089	44.32	44.17	-0.15	44.32	43.02	-1.30	589.82	605.50	15.68	589.82	717.19	127.37
S Hayes	18667	44.10	43.92	-0.18	44.10	42.80	-1.30	561.65	585.77	24.12	561.65	717.18	155.53
S Hayes	18131	43.81	43.51	-0.30	43.81	42.50	-1.31	528.78	588.56	59.78	528.78	716.74	187.96
S Hayes	18011	43.76	43.44	-0.32	43.76	42.44	-1.32	527.34	588.20	60.86	527.34	716.23	188.89
S Hayes	17882	43.64	43.26	-0.38	43.64	42.13	-1.51	527.34	588.19	60.85	527.34	716.09	188.75

S Hayes	17819	43.61	43.22	-0.39	43.61	42.04	-1.57	622.17	682.27	60.10	622.17	828.98	206.81
S Hayes	17625	43.50	43.10	-0.40	43.50	41.94	-1.56	622.03	616.77	-5.26	622.03	828.98	206.95
S Hayes	16929	43.14	42.74	-0.40	43.14	41.68	-1.46	602.85	556.29	-46.56	602.85	828.97	226.12
S Hayes	16252	42.72	42.32	-0.40	42.72	41.48	-1.24	600.50	556.18	-44.32	600.50	798.96	198.46
S Hayes	15710	42.41	41.98	-0.43	42.41	41.36	-1.05	589.97	556.07	-33.90	589.97	751.49	161.52
S Hayes	15029	42.10	41.69	-0.41	42.10	41.26	-0.84	571.39	502.14	-69.25	571.39	589.20	17.81
S Hayes	14384	41.82	41.42	-0.40	41.82	41.21	-0.61	568.79	502.06	-66.73	568.79	474.92	-93.87
S Hayes	14005	41.62	41.24	-0.38	41.62	41.07	-0.55	574.66	500.74	-73.92	574.66	473.31	-101.35
S Hayes	13292	41.23	40.88	-0.35	41.23	40.68	-0.55	560.73	495.56	-65.17	560.73	454.80	-105.93
S Hayes	12382	40.77	40.45	-0.32	40.77	40.32	-0.45	546.82	494.14	-52.68	546.82	445.93	-100.89
S Hayes	11488	40.20	39.87	-0.33	40.20	39.82	-0.38	525.87	481.66	-44.21	525.87	439.59	-86.28
S Hayes	10519	39.25	38.92	-0.33	39.25	38.80	-0.45	536.13	489.81	-46.32	536.13	448.78	-87.35
S Hayes	10267	39.03	38.70	-0.33	39.03	38.56	-0.47	535.78	489.70	-46.08	535.78	448.64	-87.14
S Hayes	9653	38.66	38.36	-0.30	38.66	38.22	-0.44	535.51	489.51	-46.00	535.51	448.41	-87.10
S Hayes	9246	38.41	38.13	-0.28	38.41	38.02	-0.39	535.16	489.28	-45.88	535.16	448.17	-86.99
S Hayes	8443	37.90	37.65	-0.25	37.90	37.61	-0.29	525.09	484.76	-40.33	525.09	444.24	-80.85
S Hayes	7748	37.49	37.25	-0.24	37.49	37.23	-0.26	507.52	479.96	-27.56	507.52	440.24	-67.28
S Hayes	6801	36.59	36.35	-0.24	36.59	36.41	-0.18	501.07	476.39	-24.68	501.07	432.66	-68.41
S Hayes	6039	35.83	35.56	-0.27	35.83	35.79	-0.04	494.87	472.92	-21.95	494.87	419.74	-75.13
S Hayes	5587	35.36	35.09	-0.27	35.36	35.35	-0.01	512.85	480.19	-32.66	512.85	429.24	-83.61
S Hayes	4889	34.52	34.24	-0.28	34.52	34.21	-0.31	510.78	479.57	-31.21	510.78	431.04	-79.74
S Hayes	4426	34.09	33.82	-0.27	34.09	33.65	-0.44	512.72	482.93	-29.79	512.72	436.06	-76.66
S Hayes	3865	33.73	33.49	-0.24	33.73	33.34	-0.39	541.26	486.86	-54.40	541.26	447.38	-93.88
S Hayes	3683	33.69	33.45	-0.24	33.69	33.30	-0.39	527.58	483.93	-43.65	527.58	443.89	-83.69
S Hayes	3538	33.63	33.40	-0.23	33.63	33.26	-0.37	527.58	483.93	-43.65	527.58	441.93	-85.65
S Hayes	3380	33.54	33.32	-0.22	33.54	33.18	-0.36	525.90	483.76	-42.14	525.90	441.94	-83.96
S Hayes	2974	33.24	33.05	-0.19	33.24	32.89	-0.35	505.68	471.92	-33.76	505.68	431.66	-74.02
S Hayes	2913	33.22	33.03	-0.19	33.22	32.88	-0.34	505.55	471.86	-33.69	505.55	431.64	-73.91
S Hayes	2835	32.99	32.83	-0.16	32.99	32.72	-0.27	505.22	471.86	-33.36	505.22	431.58	-73.64
S Hayes	2769	32.94	32.79	-0.15	32.94	32.67	-0.27	505.09	471.86	-33.23	505.09	431.57	-73.52
S Hayes	2619	32.80	32.66	-0.14	32.80	32.55	-0.25	505.01	471.78	-33.23	505.01	431.50	-73.51
S Hayes	2137	32.37	32.27	-0.10	32.37	32.21	-0.16	494.37	465.70	-28.67	494.37	429.11	-65.26
S Hayes	1905	32.26	32.17	-0.09	32.26	32.12	-0.14	485.52	459.80	-25.72	485.52	424.61	-60.91
S Hayes	1622	32.16	32.07	-0.09	32.16	32.04	-0.12	484.07	459.18	-24.89	484.07	423.90	-60.17
S Hayes	1185	32.06	31.98	-0.08	32.06	31.95	-0.11	466.19	441.02	-25.17	466.19	408.18	-58.01
S Hayes	707	32.00	31.92	-0.08	32.00	31.90	-0.10	391.51	378.28	-13.23	391.51	362.96	-28.55
S Hayes	284	31.97	31.89	-0.08	31.97	31.87	-0.10	292.42	286.84	-5.58	292.42	285.23	-7.19
N Hayes	30961	49.39	49.39	0.00	49.39	49.32	-0.07	74.08	74.06	-0.02	74.08	67.45	-6.63
N Hayes	30742	49.34	49.34	0.00	49.34	49.28	-0.06	73.65	73.58	-0.07	73.65	64.55	-9.10
N Hayes	30356	49.29	49.29	0.00	49.29	49.23	-0.06	105.91	105.92	0.01	105.91	104.00	-1.91
N Hayes	30123	49.24	49.24	0.00	49.24	49.17	-0.07	113.40	113.50	0.10	113.40	119.45	6.05

N Hayes	29703	49.14	49.14	0.00	49.14	49.03	-0.11	137.87	138.04	0.17	137.87	154.18	16.31
N Hayes	29123	48.97	48.97	0.00	48.97	48.77	-0.20	183.40	183.72	0.32	183.40	221.06	37.66
N Hayes	28748	48.87	48.87	0.00	48.87	48.57	-0.30	202.47	202.97	0.50	202.47	256.16	53.69
N Hayes	28652	48.85	48.84	-0.01	48.85	48.52	-0.33	203.88	204.37	0.49	203.88	260.75	56.87
N Hayes	28558	48.74	48.74	0.00	48.74	48.34	-0.40	203.87	204.37	0.50	203.87	260.75	56.88
N Hayes	28513	48.73	48.72	-0.01	48.73	48.30	-0.43	210.38	210.90	0.52	210.38	266.12	55.74
N Hayes	28169	48.62	48.62	0.00	48.62	48.05	-0.57	244.76	245.46	0.70	244.76	311.66	66.90
N Hayes	27721	48.44	48.43	-0.01	48.44	47.42	-1.02	267.97	269.18	1.21	267.97	359.88	91.91
N Hayes	27362	48.31	48.30	-0.01	48.31	46.76	-1.55	289.15	291.03	1.88	289.15	400.14	110.99
N Hayes	27197	48.27	48.26	-0.01	48.27	46.53	-1.74	332.99	334.80	1.81	332.99	419.70	86.71
N Hayes	26405	48.26	48.25	-0.01	48.26	46.55	-1.71	332.97	334.86	1.89	332.97	419.70	86.73
N Hayes	26348	48.22	48.21	-0.01	48.22	46.52	-1.70	314.20	316.19	1.99	314.20	420.02	105.82
N Hayes	25970	48.01	48.00	-0.01	48.01	46.30	-1.71	317.93	320.63	2.70	317.93	425.63	107.70
N Hayes	25468	47.76	47.74	-0.02	47.76	46.04	-1.72	316.59	319.99	3.40	316.59	433.19	116.60
N Hayes	25135	47.62	47.58	-0.04	47.62	45.90	-1.72	312.30	316.31	4.01	312.30	438.29	125.99
N Hayes	24504	47.30	47.25	-0.05	47.30	45.60	-1.70	323.55	331.11	7.56	323.55	448.41	124.86
N Hayes	23880	46.81	46.66	-0.15	46.81	45.30	-1.51	314.26	329.73	15.47	314.26	457.88	143.62
N Hayes	23475	46.46	46.21	-0.25	46.46	45.09	-1.37	317.81	334.90	17.09	317.81	464.01	146.20
N Hayes	23175	46.21	45.85	-0.36	46.21	44.91	-1.30	320.18	336.78	16.60	320.18	468.53	148.35
N Hayes	22938	46.01	45.53	-0.48	46.01	44.78	-1.23	309.43	334.54	25.11	309.43	472.12	162.69
N Hayes	22883	45.99	45.49	-0.50	45.99	44.75	-1.24	310.86	335.46	24.60	310.86	472.93	162.07
N Hayes	22839	45.97	45.43	-0.54	45.97	44.72	-1.25	321.94	356.93	34.99	321.94	473.85	151.91
N Hayes	22732	45.69	45.06	-0.63	45.69	44.19	-1.50	321.48	356.93	35.45	321.48	472.46	150.98
N Hayes	22663	45.64	44.97	-0.67	45.64	44.15	-1.49	322.26	357.80	35.54	322.26	473.21	150.95
N Hayes	22356	45.48	44.61	-0.87	45.48	43.98	-1.50	329.35	366.28	36.93	329.35	477.48	148.13
N Hayes	21810	45.17	44.14	-1.03	45.17	43.70	-1.47	343.47	296.55	-46.92	343.47	484.86	141.39
N Hayes	21491	44.99	43.92	-1.07	44.99	43.56	-1.43	353.48	293.15	-60.33	353.48	489.37	135.89
N Hayes	20586	44.53	43.36	-1.17	44.53	43.29	-1.24	363.03	278.19	-84.84	363.03	502.42	139.39
N Hayes	20278	44.39	43.20	-1.19	44.39	43.21	-1.18	346.79	244.49	-102.30	346.79	507.07	160.28
N Hayes	20159	44.37	43.17	-1.20	44.37	43.19	-1.18	347.47	246.27	-101.20	347.47	508.97	161.50
N Hayes	19934	44.29	43.14	-1.15	44.29	43.06	-1.23	347.47	246.27	-101.20	347.47	508.39	160.92
N Hayes	19841	44.25	43.11	-1.14	44.25	43.04	-1.21	359.13	247.47	-111.66	359.13	509.61	150.48
N Hayes	19659	44.20	43.06	-1.14	44.20	43.00	-1.20	356.65	250.04	-106.61	356.65	512.31	155.66
N Hayes	19505	44.13	43.00	-1.13	44.13	42.97	-1.16	358.57	252.19	-106.38	358.57	514.58	156.01
N Hayes	19394	44.11	42.96	-1.15	44.11	42.95	-1.16	355.75	253.64	-102.11	355.75	515.63	159.88
N Hayes	19263	44.01	42.87	-1.14	44.01	42.83	-1.18	355.75	253.64	-102.11	355.75	514.89	159.14
N Hayes	19172	43.97	42.82	-1.15	43.97	42.81	-1.16	361.48	254.26	-107.22	361.48	515.66	154.18
N Hayes	18658	43.68	42.52	-1.16	43.68	42.71	-0.97	364.38	259.00	-105.38	364.38	518.82	154.44
N Hayes	18218	43.43	42.26	-1.17	43.43	42.63	-0.80	369.91	260.62	-109.29	369.91	521.62	151.71
N Hayes	17823	43.26	42.09	-1.17	43.26	42.55	-0.71	376.15	263.25	-112.90	376.15	522.88	146.73
N Hayes	17784	43.20	42.04	-1.16	43.20	42.55	-0.65	375.35	263.52	-111.83	375.35	523.07	147.72

N Hayes	17725	43.22	42.04	-1.18	43.22	42.38	-0.84	377.16	263.52	-113.64	377.16	521.67	144.51
N Hayes	17684	43.20	42.02	-1.18	43.20	42.37	-0.83	379.32	263.80	-115.52	379.32	521.92	142.60
N Hayes	16695	42.81	41.59	-1.22	42.81	42.16	-0.65	378.77	270.39	-108.38	378.77	527.97	149.20
N Hayes	16144	42.42	41.24	-1.18	42.42	42.05	-0.37	380.66	274.08	-106.58	380.66	501.09	120.43
N Hayes	15295	41.75	40.68	-1.07	41.75	41.90	0.15	375.32	279.73	-95.59	375.32	496.03	120.71
N Hayes	14581	41.25	40.22	-1.03	41.25	41.78	0.53	388.69	284.46	-104.23	388.69	498.33	109.64
N Hayes	14073	40.76	39.71	-1.05	40.76	41.44	0.68	391.47	287.87	-103.60	391.47	499.89	108.42
N Hayes	13846	40.51	39.42	-1.09	40.51	41.25	0.74	392.29	269.79	-122.50	392.29	495.62	103.33
N Hayes	13776	40.41	39.30	-1.11	40.41	41.16	0.75	389.78	268.54	-121.24	389.78	486.91	97.13
N Hayes	13476	40.28	39.17	-1.11	40.28	41.00	0.72	390.26	268.54	-121.72	390.26	482.15	91.89
N Hayes	12804	39.85	38.76	-1.09	39.85	40.58	0.73	399.84	272.97	-126.87	399.84	485.38	85.54
N Hayes	12148	39.36	38.31	-1.05	39.36	40.12	0.76	397.25	276.82	-120.43	397.25	484.80	87.55
N Hayes	11610	38.89	37.85	-1.04	38.89	39.59	0.70	400.01	280.13	-119.88	400.01	490.79	90.78
N Hayes	11065	38.31	37.26	-1.05	38.31	38.92	0.61	387.87	282.59	-105.28	387.87	500.83	112.96
N Hayes	10229	37.46	36.43	-1.03	37.46	38.12	0.66	430.03	297.79	-132.24	430.03	497.90	67.87
N Hayes	9624	37.03	36.01	-1.02	37.03	37.70	0.67	435.74	300.91	-134.83	435.74	534.30	98.56
N Hayes	9030	36.66	35.67	-0.99	36.66	37.34	0.68	440.17	303.46	-136.71	440.17	519.16	78.99
N Hayes	8148	36.14	35.18	-0.96	36.14	36.81	0.67	444.39	309.27	-135.12	444.39	552.65	108.26
N Hayes	7969	36.02	35.06	-0.96	36.02	36.68	0.66	460.06	322.36	-137.70	460.06	543.14	83.08
N Hayes	7937	36.03	35.07	-0.96	36.03	36.70	0.67	459.12	322.40	-136.72	459.12	544.05	84.93
N Hayes	7824	35.95	35.01	-0.94	35.95	36.63	0.68	459.12	322.40	-136.72	459.12	533.91	74.79
N Hayes	7749	35.92	34.98	-0.94	35.92	36.59	0.67	459.32	322.97	-136.35	459.32	534.22	74.90
N Hayes	7678	35.86	34.93	-0.93	35.86	36.53	0.67	459.40	323.42	-135.98	459.40	534.68	75.28
N Hayes	7607	35.81	34.88	-0.93	35.81	36.48	0.67	459.33	323.92	-135.41	459.33	535.19	75.86
N Hayes	7510	35.75	34.82	-0.93	35.75	36.43	0.68	459.87	324.23	-135.64	459.87	535.80	75.93
N Hayes	7159	35.54	34.62	-0.92	35.54	36.25	0.71	465.16	329.83	-135.33	465.16	539.63	74.47
N Hayes	6711	35.21	34.34	-0.87	35.21	35.93	0.72	466.30	331.47	-134.83	466.30	539.79	73.49
N Hayes	6045	34.74	33.97	-0.77	34.74	35.51	0.77	449.02	327.30	-121.72	449.02	550.17	101.15
N Hayes	5377	34.15	33.46	-0.69	34.15	34.96	0.81	499.60	371.96	-127.64	499.60	640.69	141.09
N Hayes	4771	33.83	33.19	-0.64	33.83	34.68	0.85	520.57	400.58	-119.99	520.57	644.30	123.73
N Hayes	3997	33.63	33.02	-0.61	33.63	34.50	0.87	547.35	442.25	-105.10	547.35	660.57	113.22
N Hayes	3899	33.63	33.02	-0.61	33.63	34.50	0.87	552.54	448.74	-103.80	552.54	656.93	104.39
N Hayes	3798	33.50	32.91	-0.59	33.50	34.39	0.89	550.16	448.74	-101.42	550.16	656.86	106.70
N Hayes	3689	33.39	32.81	-0.58	33.39	34.29	0.90	552.59	454.20	-98.39	552.59	669.67	117.08
N Hayes	3370	33.24	32.67	-0.57	33.24	34.09	0.85	564.60	472.74	-91.86	564.60	659.89	95.29
N Hayes	2774	32.80	32.28	-0.52	32.80	33.65	0.85	587.25	500.64	-86.61	587.25	662.32	75.07
N Hayes	2090	32.07	31.59	-0.48	32.07	32.92	0.85	615.94	546.53	-69.41	615.94	722.18	106.24
N Hayes	1311	31.25	30.77	-0.48	31.25	32.03	0.78	615.79	545.26	-70.53	615.79	733.26	117.47
N Hayes	706	30.57	30.09	-0.48	30.57	31.32	0.75	617.41	546.41	-71.00	617.41	733.12	115.71
N Hayes	349	30.22	29.74	-0.48	30.22	30.98	0.76	616.88	546.06	-70.82	616.88	733.11	116.23

 Table B-3.
 1D Resulting WSEL for Existing versus Capital Improvements Plan and Alternative (50-Year Storm)

River	River Station	Existing W.S.	CIP W.S. Elevation	Difference	Existing W.S.	ALT W.S.	Difference	Existing Q Total	CIP Q Total	Difference	Existing Q Total	Alt Q Total	Difference
		fievation (ft)	(ft)	(ft)	Elevation (ft)	Elevation (ft)	(ft)	(cfs)	(cfs)	(cfs)	(afa)	(afa)	(ofa)
W Fork	51004	57.87	57.87	0.00	57.87	57.96	0.09	92.34	92.80	0.46	(CIS) 92.34	101.39	9.05
W Fork	50013	57.74	57.73	-0.01	57.74	57.90	0.09	230.33	231.67	1.34	230.33	263.15	32.82
WFork	40203	57.64	57.63	-0.01	57.64	57.67	0.00	230.33	202 72	3.56	230.33	203.13	50.27
W Fork	49293	57.04	57.05	-0.01	57.50	57.07	0.03	237.06	302.72	6.18	237.06	411 75	74.60
W Fork	46363	57.30	57.40	-0.02	57.30	57.15	-0.03	282.27	202.19	0.10	282.27	206.11	112 74
W Fork	40928	57.32	57.20	-0.04	57.32	57.13	-0.17	202.37	292.10	9.01	202.37	208.62	115.74
W Fork	40739	57.50	57.27	-0.03	57.50	57.04	-0.17	262.01	292.01	10.00	262.01	270.02	125.97
W Fork	46223	57.27	57.24	-0.03	57.27	57.04	-0.23	242.98	230.75	13.//	242.98	3/8.83	155.87
W FORK	43039	57.20	57.21	-0.05	57.20	56.97	-0.29	190.18	207.44	17.20	190.18	357.54	216.17
W FORK	43030	57.25	57.20	-0.05	57.25	56.91	-0.34	22.01	0.72	22.90	22.01	332.49	210.17
W Fork	44689	57.25	57.20	-0.05	57.25	56.90	-0.35	-23.01	0.73	23.74	-23.01	228.09	251.10
W Fork	44447	57.24	57.20	-0.04	57.24	56.90	-0.34	-211.79	-192.06	19.73	-211.79	82.10	293.89
W Fork	44363	57.24	57.20	-0.04	57.24	56.90	-0.34	-265.91	-246.03	19.88	-265.91	52.00	317.91
W Fork	44263	57.28	57.23	-0.05	57.28	56.89	-0.39	-306.98	-291.03	15.95	-306.98	43.64	350.62
W Fork	44147	57.27	57.22	-0.05	57.27	56.89	-0.38	-419.98	-402.54	17.44	-419.98	-43.59	376.39
W Fork	43626	56.88	56.79	-0.09	56.88	56.56	-0.32	1115.07	1147.13	32.06	1115.07	1683.59	568.52
W Fork	43089	56.53	56.37	-0.16	56.53	56.24	-0.29	960.88	991.88	31.00	960.88	1664.66	703.78
W Fork	42405	56.21	56.01	-0.20	56.21	55.84	-0.37	813.01	793.55	-19.46	813.01	1375.40	562.39
W Fork	41481	55.90	55.83	-0.07	55.90	55.58	-0.32	672.56	344.12	-328.44	672.56	669.48	-3.08
W Fork	40328	55.60	55.53	-0.07	55.60	55.45	-0.15	721.56	861.44	139.88	721.56	695.16	-26.40
W Fork	39472	55.53	55.41	-0.12	55.53	55.36	-0.17	307.60	436.22	128.62	307.60	852.67	545.07
W Fork	38398	55.30	55.17	-0.13	55.30	55.22	-0.08	660.28	622.71	-37.57	660.28	1138.73	478.45
W Fork	38222	55.28	55.15	-0.13	55.28	55.20	-0.08	569.36	537.02	-32.34	569.36	1067.40	498.04
W Fork	38170	55.26	55.13	-0.13	55.26	55.18	-0.08	551.79	524.40	-27.39	551.79	956.78	404.99
W Fork	38079	55.18	55.06	-0.12	55.18	54.93	-0.25	545.56	521.08	-24.48	545.56	944.74	399.18
W Fork	38058	55.17	55.05	-0.12	55.17	54.95	-0.22	550.63	525.14	-25.49	550.63	979.60	428.97
W Fork	37923	55.15	55.03	-0.12	55.15	54.92	-0.23	554.82	525.61	-29.21	554.82	1073.78	518.96
W Fork	37297	55.03	54.91	-0.12	55.03	54.81	-0.22	533.56	527.68	-5.88	533.56	1240.58	707.02
W Fork	36707	54.94	54.81	-0.13	54.94	54.72	-0.22	477.07	469.00	-8.07	477.07	1199.04	721.97
W Fork	36123	54.84	54.71	-0.13	54.84	54.62	-0.22	488.33	485.07	-3.26	488.33	1257.07	768.74
W Fork	35439	54.70	54.56	-0.14	54.70	54.49	-0.21	572.09	565.94	-6.15	572.09	1335.19	763.10
W Fork	33855	54.55	54.39	-0.16	54.55	54.27	-0.28	348.60	383.71	35.11	348.60	1284.04	935.44
W Fork	33191	54.24	54.07	-0.17	54.24	54.02	-0.22	1361.15	1318.25	-42.90	1361.15	2501.02	1139.87
W Fork	32646	53.86	53.69	-0.17	53.86	53.81	-0.05	1596.63	1555.21	-41.42	1596.63	2600.07	1003.44
W Fork	32138	53.47	53.30	-0.17	53.47	53.45	-0.02	2276.37	2163.31	-113.06	2276.37	2941.09	664.72
W Fork	32096	53.47	53.30	-0.17	53.47	53.45	-0.02	2289.23	2172.53	-116.70	2289.23	2948.03	658.80
W Fork	31777	53.12	53.00	-0.12	53.12	52.82	-0.30	2287.97	2172.05	-115.92	2287.97	2945.75	657.78

W Fork	31726	53.10	52.98	-0.12	53.10	52.82	-0.28	2275.87	2158.22	-117.65	2275.87	2983.57	707.70
W Fork	31011	52.72	52.61	-0.11	52.72	52.44	-0.28	1389.69	1334.64	-55.05	1389.69	2492.38	1102.69
W Fork	30397	52.39	52.28	-0.11	52.39	52.03	-0.36	895.27	860.34	-34.93	895.27	2392.91	1497.64
W Fork	29875	52.15	52.04	-0.11	52.15	51.73	-0.42	936.08	908.17	-27.91	936.08	2367.07	1430.99
W Fork	29493	52.08	51.97	-0.11	52.08	51.58	-0.50	694.20	681.13	-13.07	694.20	2379.35	1685.15
W Fork	27829	51.24	51.14	-0.10	51.24	51.19	-0.05	1103.23	1067.81	-35.42	1103.23	2268.27	1165.04
W Fork	27814	51.22	51.12	-0.10	51.22	51.18	-0.04	1103.57	1068.36	-35.21	1103.57	2220.38	1116.81
W Fork	27717	51.16	51.06	-0.10	51.16	50.58	-0.58	1103.49	1068.31	-35.18	1103.49	2219.20	1115.71
W Fork	27700	51.15	51.06	-0.09	51.15	50.57	-0.58	1103.74	1068.56	-35.18	1103.74	2258.85	1155.11
W Fork	27474	50.97	50.88	-0.09	50.97	50.45	-0.52	1101.98	1071.87	-30.11	1101.98	2150.35	1048.37
W Fork	27110	50.82	50.73	-0.09	50.82	50.40	-0.42	885.32	865.06	-20.26	885.32	1674.81	789.49
W Fork	27070	50.78	50.69	-0.09	50.78	50.39	-0.39	859.36	841.22	-18.14	859.36	1594.25	734.89
W Fork	27053	50.73	50.64	-0.09	50.73	49.67	-1.06	859.30	841.21	-18.09	859.30	1589.49	730.19
W Fork	27004	50.70	50.61	-0.09	50.70	49.64	-1.06	899.22	883.51	-15.71	899.22	1568.75	669.53
W Fork	26409	50.44	50.34	-0.10	50.44	49.52	-0.92	976.64	962.21	-14.43	976.64	1274.60	297.96
W Fork	25744	50.25	50.15	-0.10	50.25	49.42	-0.83	824.50	817.70	-6.80	824.50	1128.17	303.67
W Fork	24706	50.02	49.91	-0.11	50.02	49.29	-0.73	917.08	898.70	-18.38	917.08	1129.50	212.42
W Fork	24589	49.96	49.85	-0.11	49.96	49.28	-0.68	912.63	897.48	-15.15	912.63	1175.83	263.20
W Fork	24122	49.77	49.67	-0.10	49.77	49.19	-0.58	985.99	950.13	-35.86	985.99	1664.11	678.12
W Fork	23947	49.68	49.59	-0.09	49.68	49.13	-0.55	1000.89	954.95	-45.94	1000.89	2056.21	1055.32
W Fork	23604	49.52	49.43	-0.09	49.52	48.92	-0.60	1184.86	1139.93	-44.93	1184.86	2389.13	1204.27
W Fork	23518	49.47	49.38	-0.09	49.47	48.86	-0.61	1287.59	1249.07	-38.52	1287.59	2422.86	1135.27
W Fork	23373	49.38	49.30	-0.08	49.38	48.33	-1.05	1287.55	1249.01	-38.54	1287.55	2417.97	1130.42
W Fork	23306	49.34	49.26	-0.08	49.34	48.25	-1.09	1256.55	1220.90	-35.65	1256.55	2444.86	1188.31
W Fork	22672	48.74	48.66	-0.08	48.74	47.58	-1.16	1251.02	1224.89	-26.13	1251.02	2882.98	1631.96
W Fork	22162	48.39	48.31	-0.08	48.39	47.40	-0.99	1473.35	1453.14	-20.21	1473.35	3113.56	1640.21
W Fork	21791	48.20	48.12	-0.08	48.20	47.27	-0.93	1265.23	1249.96	-15.27	1265.23	3159.95	1894.72
W Fork	21283	48.04	47.95	-0.09	48.04	47.11	-0.93	1071.12	1059.28	-11.84	1071.12	3046.97	1975.85
W Fork	20513	47.57	47.48	-0.09	47.57	46.86	-0.71	1496.70	1460.50	-36.20	1496.70	3049.50	1552.80
W Fork	19920	47.21	47.12	-0.09	47.21	46.68	-0.53	1338.27	1292.70	-45.57	1338.27	3257.13	1918.86
W Fork	19519	47.06	46.98	-0.08	47.06	46.56	-0.50	1268.68	1231.17	-37.51	1268.68	3190.70	1922.02
W Fork	19452	47.09	47.01	-0.08	47.09	46.57	-0.52	1099.60	1065.45	-34.15	1099.60	3167.22	2067.62
W Fork	19439	47.08	47.00	-0.08	47.08	46.56	-0.52	1025.43	993.06	-32.37	1025.43	3147.87	2122.44
W Fork	19366	47.04	46.96	-0.08	47.04	46.54	-0.50	1027.10	995.04	-32.06	1027.10	3120.52	2093.42
W Fork	18605	46.66	46.59	-0.07	46.66	46.35	-0.31	1027.39	998.27	-29.12	1027.39	2873.55	1846.16
W Fork	17779	46.20	46.14	-0.06	46.20	46.21	0.01	1164.38	1136.97	-27.41	1164.38	2502.29	1337.91
W Fork	17721	46.16	46.10	-0.06	46.16	46.23	0.07	1184.59	1163.49	-21.10	1184.59	2249.70	1065.11
W Fork	17656	45.98	45.93	-0.05	45.98	45.38	-0.60	1181.40	1160.66	-20.74	1181.40	2175.09	993.69
W Fork	17575	45.94	45.89	-0.05	45.94	45.35	-0.59	1212.46	1198.29	-14.17	1212.46	2417.51	1205.05
W Fork	16646	45.58	45.52	-0.06	45.58	45.15	-0.43	1382.55	1376.10	-6.45	1382.55	2621.85	1239.30
W Fork	15846	45.26	45.29	0.03	45.26	45.06	-0.20	1268.48	1048.94	-219.54	1268.48	2156.04	887.56

W Fork	15394	45.04	45.11	0.07	45.04	45.02	-0.02	1286.15	1168.91	-117.24	1286.15	2056.51	770.36
W Fork	14911	44.89	44.96	0.07	44.89	45.00	0.11	1085.96	1085.94	-0.02	1085.96	1657.84	571.88
W Fork	14440	44.74	44.84	0.10	44.74	44.95	0.21	1164.22	1109.87	-54.35	1164.22	1445.26	281.04
W Fork	13933	44.55	44.50	-0.05	44.55	44.85	0.30	1327.20	1722.19	394.99	1327.20	1519.62	192.42
W Fork	13771	44.49	44.40	-0.09	44.49	44.83	0.34	1317.77	1697.15	379.38	1317.77	1451.75	133.98
W Fork	13736	44.48	44.38	-0.10	44.48	44.83	0.35	1317.88	1681.86	363.98	1317.88	1448.25	130.37
W Fork	13713	44.42	44.28	-0.14	44.42	44.77	0.35	1317.62	1681.18	363.56	1317.62	1448.16	130.54
W Fork	13680	44.42	44.28	-0.14	44.42	44.76	0.34	1358.80	1686.69	327.89	1358.80	1486.22	127.42
W Fork	13220	44.14	43.99	-0.15	44.14	44.61	0.47	1780.45	1828.36	47.91	1780.45	2163.26	382.81
W Fork	12944	43.99	43.85	-0.14	43.99	44.48	0.49	1851.95	1773.93	-78.02	1851.95	2147.25	295.30
W Fork	12854	43.95	43.80	-0.15	43.95	44.48	0.53	1722.80	1700.70	-22.10	1722.80	1911.61	188.81
W Fork	12769	43.62	43.48	-0.14	43.62	44.07	0.45	1721.99	1700.07	-21.92	1721.99	1911.18	189.19
W Fork	12703	43.47	43.34	-0.13	43.47	43.90	0.43	1728.44	1690.16	-38.28	1728.44	1942.35	213.91
W Fork	12244	43.24	43.12	-0.12	43.24	43.65	0.41	1317.91	1231.67	-86.24	1317.91	1431.56	113.65
W Fork	11115	42.41	42.31	-0.10	42.41	42.71	0.30	1440.91	1406.44	-34.47	1440.91	1542.59	101.68
W Fork	11040	42.41	42.31	-0.10	42.41	42.70	0.29	1565.99	1529.07	-36.92	1565.99	1700.21	134.22
W Fork	10968	42.39	42.28	-0.11	42.39	42.68	0.29	1651.54	1618.87	-32.67	1651.54	1787.48	135.94
W Fork	10945	42.36	42.26	-0.10	42.36	42.66	0.30	1657.10	1624.77	-32.33	1657.10	1795.64	138.54
W Fork	9364	41.66	41.55	-0.11	41.66	41.94	0.28	1252.73	1234.76	-17.97	1252.73	1373.39	120.66
W Fork	8384	41.09	40.95	-0.14	41.09	41.42	0.33	1541.52	1531.20	-10.32	1541.52	1670.85	129.33
W Fork	8352	41.08	40.95	-0.13	41.08	41.44	0.36	1530.47	1470.46	-60.01	1530.47	1585.09	54.62
W Fork	8320	40.91	40.80	-0.11	40.91	41.24	0.33	1528.36	1470.48	-57.88	1528.36	1538.42	10.06
W Fork	8282	40.89	40.78	-0.11	40.89	41.20	0.31	1572.45	1492.69	-79.76	1572.45	1716.28	143.83
W Fork	7427	40.43	40.34	-0.09	40.43	40.72	0.29	1228.29	1195.47	-32.82	1228.29	1371.46	143.17
W Fork	6777	40.10	40.01	-0.09	40.10	40.39	0.29	1326.92	1288.44	-38.48	1326.92	1410.43	83.51
W Fork	6131	39.75	39.66	-0.09	39.75	40.08	0.33	1505.31	1471.10	-34.21	1505.31	1502.29	-3.02
W Fork	5494	39.38	39.29	-0.09	39.38	39.69	0.31	1571.65	1534.37	-37.28	1571.65	1719.35	147.70
W Fork	5087	39.14	39.06	-0.08	39.14	39.41	0.27	1513.50	1478.32	-35.18	1513.50	1757.19	243.69
W Fork	4024	38.63	38.55	-0.08	38.63	38.90	0.27	1273.20	1252.49	-20.71	1273.20	1360.46	87.26
W Fork	2968	38.00	37.92	-0.08	38.00	38.24	0.24	1488.16	1454.66	-33.50	1488.16	1590.51	102.35
W Fork	2449	37.70	37.63	-0.07	37.70	37.94	0.24	1571.16	1535.03	-36.13	1571.16	1685.51	114.35
W Fork	1392	37.37	37.30	-0.07	37.37	37.59	0.22	1301.70	1288.42	-13.28	1301.70	1361.16	59.46
W Fork	165	37.14	37.07	-0.07	37.14	37.36	0.22	1050.03	1034.53	-15.50	1050.03	1099.71	49.68
S Hayes	37203	53.41	53.41	0.00	53.41	53.39	-0.02	107.22	107.22	0.00	107.22	108.23	1.01
S Hayes	36329	53.22	53.22	0.00	53.22	53.19	-0.03	158.74	158.90	0.16	158.74	161.52	2.78
S Hayes	34868	52.70	52.70	0.00	52.70	52.50	-0.20	277.03	277.08	0.05	277.03	303.12	26.09
S Hayes	34779	52.67	52.67	0.00	52.67	52.47	-0.20	287.97	287.99	0.02	287.97	312.57	24.60
S Hayes	34618	52.53	52.53	0.00	52.53	52.31	-0.22	287.01	286.97	-0.04	287.01	312.27	25.26
S Hayes	34512	52.46	52.46	0.00	52.46	52.22	-0.24	269.31	269.33	0.02	269.31	306.67	37.36
S Hayes	34331	52.34	52.34	0.00	52.34	52.10	-0.24	292.87	292.89	0.02	292.87	298.12	5.25
S Hayes	33541	51.93	51.93	0.00	51.93	51.69	-0.24	307.27	307.25	-0.02	307.27	272.72	-34.55

S Hayes	32687	51.56	51.56	0.00	51.56	51.37	-0.19	304.51	304.47	-0.04	304.51	314.63	10.12
S Hayes	32190	51.45	51.45	0.00	51.45	51.24	-0.21	243.86	243.93	0.07	243.86	348.65	104.79
S Hayes	32114	51.44	51.44	0.00	51.44	51.23	-0.21	252.10	252.17	0.07	252.10	328.15	76.05
S Hayes	31903	51.26	51.26	0.00	51.26	50.96	-0.30	252.05	252.14	0.09	252.05	327.26	75.21
S Hayes	31806	51.24	51.24	0.00	51.24	50.93	-0.31	268.40	268.47	0.07	268.40	395.02	126.62
S Hayes	31054	51.07	51.07	0.00	51.07	50.76	-0.31	295.48	295.52	0.04	295.48	351.10	55.62
S Hayes	30342	50.90	50.90	0.00	50.90	50.55	-0.35	357.54	357.53	-0.01	357.54	419.24	61.70
S Hayes	30248	50.89	50.89	0.00	50.89	50.54	-0.35	356.30	356.32	0.02	356.30	361.19	4.89
S Hayes	30101	50.60	50.60	0.00	50.60	50.31	-0.29	355.32	355.29	-0.03	355.32	360.85	5.53
S Hayes	30007	50.57	50.57	0.00	50.57	50.28	-0.29	366.29	366.28	-0.01	366.29	445.31	79.02
S Hayes	29429	50.41	50.41	0.00	50.41	50.13	-0.28	397.63	397.79	0.16	397.63	454.30	56.67
S Hayes	29291	50.36	50.36	0.00	50.36	50.09	-0.27	414.01	414.06	0.05	414.01	395.77	-18.24
S Hayes	29262	50.36	50.36	0.00	50.36	50.09	-0.27	417.48	417.50	0.02	417.48	375.37	-42.11
S Hayes	29140	50.08	50.08	0.00	50.08	49.86	-0.22	409.69	409.67	-0.02	409.69	375.19	-34.50
S Hayes	29063	50.05	50.05	0.00	50.05	49.83	-0.22	405.13	405.15	0.02	405.13	399.84	-5.29
S Hayes	28680	49.92	49.92	0.00	49.92	49.68	-0.24	402.11	402.42	0.31	402.11	440.97	38.86
S Hayes	28085	49.77	49.77	0.00	49.77	49.42	-0.35	373.80	373.78	-0.02	373.80	485.53	111.73
S Hayes	27494	49.67	49.66	-0.01	49.67	49.26	-0.41	372.65	372.72	0.07	372.65	428.37	55.72
S Hayes	27067	49.55	49.55	0.00	49.55	49.10	-0.45	489.28	489.58	0.30	489.28	595.72	106.44
S Hayes	26377	49.34	49.34	0.00	49.34	48.88	-0.46	449.04	449.53	0.49	449.04	486.87	37.83
S Hayes	25799	49.23	49.23	0.00	49.23	48.68	-0.55	330.45	330.62	0.17	330.45	545.12	214.67
S Hayes	24663	48.70	48.70	0.00	48.70	48.16	-0.54	679.10	679.50	0.40	679.10	685.99	6.89
S Hayes	24358	48.18	48.18	0.00	48.18	47.48	-0.70	976.81	977.00	0.19	976.81	1039.30	62.49
S Hayes	24279	48.12	48.12	0.00	48.12	47.24	-0.88	977.42	977.58	0.16	977.42	1164.75	187.33
S Hayes	23735	48.08	48.07	-0.01	48.08	47.06	-1.02	977.39	977.59	0.20	977.39	1164.74	187.35
S Hayes	23636	47.91	47.91	0.00	47.91	46.96	-0.95	1004.44	1004.49	0.05	1004.44	1297.56	293.12
S Hayes	23016	47.55	47.55	0.00	47.55	46.55	-1.00	671.81	673.13	1.32	671.81	1287.29	615.48
S Hayes	22457	47.28	47.27	-0.01	47.28	46.20	-1.08	625.57	627.57	2.00	625.57	1288.60	663.03
S Hayes	22221	47.17	47.16	-0.01	47.17	46.09	-1.08	640.45	642.46	2.01	640.45	1281.24	640.79
S Hayes	21326	46.79	46.77	-0.02	46.79	45.67	-1.12	597.70	602.32	4.62	597.70	1279.87	682.17
S Hayes	20923	46.47	46.45	-0.02	46.47	45.49	-0.98	733.13	740.87	7.74	733.13	1278.21	545.08
S Hayes	20417	46.06	46.01	-0.05	46.06	45.21	-0.85	764.93	774.27	9.34	764.93	1283.37	518.44
S Hayes	19676	45.41	45.30	-0.11	45.41	44.72	-0.69	753.31	775.43	22.12	753.31	1230.09	476.78
S Hayes	19089	45.05	44.87	-0.18	45.05	44.26	-0.79	702.97	737.91	34.94	702.97	1232.77	529.80
S Hayes	18667	44.84	44.61	-0.23	44.84	43.98	-0.86	654.63	671.46	16.83	654.63	1190.19	535.56
S Hayes	18131	44.55	44.25	-0.30	44.55	43.59	-0.96	660.21	680.94	20.73	660.21	1198.61	538.40
S Hayes	18011	44.51	44.18	-0.33	44.51	43.55	-0.96	640.47	693.86	53.39	640.47	1120.58	480.11
S Hayes	17882	44.34	44.00	-0.34	44.34	43.04	-1.30	638.38	693.09	54.71	638.38	1105.98	467.60
S Hayes	17819	44.26	43.92	-0.34	44.26	42.89	-1.37	862.70	880.79	18.09	862.70	1331.89	469.19
S Hayes	17625	44.08	43.85	-0.23	44.08	42.76	-1.32	861.69	674.70	-186.99	861.69	1291.02	429.33
S Hayes	16929	43.61	43.55	-0.06	43.61	42.41	-1.20	753.06	578.62	-174.44	753.06	1134.76	381.70

S Hayes	16252	43.13	43.19	0.06	43.13	42.29	-0.84	708.07	590.52	-117.55	708.07	772.77	64.70
S Hayes	15710	42.78	42.90	0.12	42.78	42.26	-0.52	660.85	634.21	-26.64	660.85	561.46	-99.39
S Hayes	15029	42.47	42.51	0.04	42.47	42.22	-0.25	617.27	717.05	99.78	617.27	523.33	-93.94
S Hayes	14384	42.19	42.15	-0.04	42.19	42.18	-0.01	607.60	691.65	84.05	607.60	571.13	-36.47
S Hayes	14005	42.01	41.94	-0.07	42.01	42.05	0.04	601.49	649.27	47.78	601.49	623.46	21.97
S Hayes	13292	41.64	41.52	-0.12	41.64	41.66	0.02	605.88	618.62	12.74	605.88	628.60	22.72
S Hayes	12382	41.21	41.04	-0.17	41.21	41.27	0.06	597.26	598.70	1.44	597.26	585.18	-12.08
S Hayes	11488	40.69	40.47	-0.22	40.69	40.80	0.11	567.49	565.87	-1.62	567.49	559.16	-8.33
S Hayes	10519	39.78	39.52	-0.26	39.78	39.81	0.03	601.92	573.04	-28.88	601.92	583.92	-18.00
S Hayes	10267	39.56	39.30	-0.26	39.56	39.57	0.01	601.57	572.95	-28.62	601.57	582.81	-18.76
S Hayes	9653	39.18	38.92	-0.26	39.18	39.19	0.01	606.83	569.15	-37.68	606.83	600.27	-6.56
S Hayes	9246	38.92	38.66	-0.26	38.92	38.94	0.02	605.72	568.95	-36.77	605.72	597.44	-8.28
S Hayes	8443	38.44	38.16	-0.28	38.44	38.48	0.04	570.92	551.80	-19.12	570.92	557.61	-13.31
S Hayes	7748	38.15	37.78	-0.37	38.15	38.19	0.04	457.25	506.39	49.14	457.25	440.67	-16.58
S Hayes	6801	37.23	36.90	-0.33	37.23	37.35	0.12	518.35	528.14	9.79	518.35	487.56	-30.79
S Hayes	6039	36.44	36.17	-0.27	36.44	36.69	0.25	522.02	522.54	0.52	522.02	486.50	-35.52
S Hayes	5587	36.00	35.71	-0.29	36.00	36.27	0.27	595.40	566.02	-29.38	595.40	553.57	-41.83
S Hayes	4889	35.18	34.87	-0.31	35.18	35.28	0.10	600.12	566.20	-33.92	600.12	546.43	-53.69
S Hayes	4426	34.72	34.43	-0.29	34.72	34.74	0.02	635.48	583.76	-51.72	635.48	611.70	-23.78
S Hayes	3865	34.30	34.04	-0.26	34.30	34.32	0.02	672.73	602.49	-70.24	672.73	662.14	-10.59
S Hayes	3683	34.26	34.00	-0.26	34.26	34.28	0.02	656.78	587.21	-69.57	656.78	647.92	-8.86
S Hayes	3538	34.15	33.91	-0.24	34.15	34.17	0.02	656.72	587.21	-69.51	656.72	647.66	-9.06
S Hayes	3380	34.05	33.82	-0.23	34.05	34.07	0.02	656.10	587.13	-68.97	656.10	644.50	-11.60
S Hayes	2974	33.71	33.49	-0.22	33.71	33.70	-0.01	590.04	549.87	-40.17	590.04	572.73	-17.31
S Hayes	2913	33.69	33.46	-0.23	33.69	33.68	-0.01	583.41	548.68	-34.73	583.41	565.63	-17.78
S Hayes	2835	33.37	33.18	-0.19	33.37	33.38	0.01	582.67	548.60	-34.07	582.67	563.36	-19.31
S Hayes	2769	33.31	33.13	-0.18	33.31	33.32	0.01	582.48	548.58	-33.90	582.48	562.83	-19.65
S Hayes	2619	33.17	32.99	-0.18	33.17	33.18	0.01	579.74	547.83	-31.91	579.74	559.68	-20.06
S Hayes	2137	32.76	32.54	-0.22	32.76	32.80	0.04	530.45	521.09	-9.36	530.45	506.88	-23.57
S Hayes	1905	32.66	32.44	-0.22	32.66	32.71	0.05	518.73	506.50	-12.23	518.73	500.04	-18.69
S Hayes	1622	32.57	32.33	-0.24	32.57	32.62	0.05	512.84	502.16	-10.68	512.84	488.15	-24.69
S Hayes	1185	32.46	32.23	-0.23	32.46	32.53	0.07	499.69	488.59	-11.10	499.69	472.14	-27.55
S Hayes	707	32.42	32.17	-0.25	32.42	32.50	0.08	351.15	385.47	34.32	351.15	323.06	-28.09
S Hayes	284	32.39	32.14	-0.25	32.39	32.47	0.08	323.99	304.98	-19.01	323.99	329.52	5.53
N Hayes	30961	50.11	50.11	0.00	50.11	50.08	-0.03	141.01	140.97	-0.04	141.01	136.04	-4.97
N Hayes	30742	50.03	50.03	0.00	50.03	50.01	-0.02	140.87	140.74	-0.13	140.87	133.98	-6.89
N Hayes	30356	49.92	49.92	0.00	49.92	49.90	-0.02	191.52	191.54	0.02	191.52	193.35	1.83
N Hayes	30123	49.86	49.86	0.00	49.86	49.83	-0.03	160.57	160.65	0.08	160.57	166.15	5.58
N Hayes	29703	49.76	49.76	0.00	49.76	49.71	-0.05	170.44	170.55	0.11	170.44	184.21	13.77
N Hayes	29123	49.60	49.60	0.00	49.60	49.50	-0.10	220.59	220.85	0.26	220.59	256.75	36.16
N Hayes	28748	49.52	49.52	0.00	49.52	49.36	-0.16	228.71	229.09	0.38	228.71	278.83	50.12

N Hayes	28652	49.50	49.50	0.00	49.50	49.33	-0.17	225.23	225.68	0.45	225.23	281.27	56.04
N Hayes	28558	49.41	49.41	0.00	49.41	49.14	-0.27	224.65	224.99	0.34	224.65	281.25	56.60
N Hayes	28513	49.40	49.40	0.00	49.40	49.11	-0.29	232.92	233.38	0.46	232.92	298.66	65.74
N Hayes	28169	49.30	49.30	0.00	49.30	48.90	-0.40	280.31	280.88	0.57	280.31	378.23	97.92
N Hayes	27721	49.15	49.15	0.00	49.15	48.34	-0.81	301.92	302.65	0.73	301.92	472.23	170.31
N Hayes	27362	49.01	49.01	0.00	49.01	47.77	-1.24	374.23	374.97	0.74	374.23	547.60	173.37
N Hayes	27197	48.96	48.95	-0.01	48.96	47.50	-1.46	490.91	491.76	0.85	490.91	613.91	123.00
N Hayes	26405	48.92	48.91	-0.01	48.92	47.49	-1.43	490.86	491.73	0.87	490.86	613.73	122.87
N Hayes	26348	48.86	48.86	0.00	48.86	47.48	-1.38	442.08	443.14	1.06	442.08	602.51	160.43
N Hayes	25970	48.57	48.56	-0.01	48.57	47.31	-1.26	427.31	429.08	1.77	427.31	615.43	188.12
N Hayes	25468	48.29	48.28	-0.01	48.29	47.10	-1.19	383.66	387.06	3.40	383.66	631.95	248.29
N Hayes	25135	48.14	48.12	-0.02	48.14	46.98	-1.16	371.79	376.04	4.25	371.79	643.44	271.65
N Hayes	24504	47.79	47.75	-0.04	47.79	46.73	-1.06	393.29	400.83	7.54	393.29	664.18	270.89
N Hayes	23880	47.33	47.20	-0.13	47.33	46.48	-0.85	351.66	372.76	21.10	351.66	687.06	335.40
N Hayes	23475	47.02	46.84	-0.18	47.02	46.32	-0.70	360.99	372.68	11.69	360.99	687.63	326.64
N Hayes	23175	46.79	46.56	-0.23	46.79	46.20	-0.59	374.67	374.55	-0.12	374.67	688.39	313.72
N Hayes	22938	46.62	46.34	-0.28	46.62	46.12	-0.50	351.53	363.23	11.70	351.53	702.59	351.06
N Hayes	22883	46.61	46.32	-0.29	46.61	46.11	-0.50	351.51	366.45	14.94	351.51	681.94	330.43
N Hayes	22839	46.61	46.30	-0.31	46.61	46.11	-0.50	338.36	386.44	48.08	338.36	659.41	321.05
N Hayes	22732	46.33	45.93	-0.40	46.33	45.23	-1.10	337.36	372.69	35.33	337.36	659.25	321.89
N Hayes	22663	46.30	45.87	-0.43	46.30	45.20	-1.10	339.62	372.41	32.79	339.62	675.53	335.91
N Hayes	22356	46.16	45.68	-0.48	46.16	45.04	-1.12	363.38	380.52	17.14	363.38	697.70	334.32
N Hayes	21810	45.91	45.53	-0.38	45.91	44.78	-1.13	387.48	193.96	-193.52	387.48	740.96	353.48
N Hayes	21491	45.77	45.49	-0.28	45.77	44.65	-1.12	405.44	209.79	-195.65	405.44	752.47	347.03
N Hayes	20586	45.33	45.24	-0.09	45.33	44.35	-0.98	462.82	361.35	-101.47	462.82	785.16	322.34
N Hayes	20278	45.19	45.06	-0.13	45.19	44.25	-0.94	425.05	476.34	51.29	425.05	791.93	366.88
N Hayes	20159	45.18	45.05	-0.13	45.18	44.22	-0.96	425.70	430.31	4.61	425.70	796.76	371.06
N Hayes	19934	45.08	44.95	-0.13	45.08	44.01	-1.07	424.56	421.31	-3.25	424.56	796.46	371.90
N Hayes	19841	45.04	44.91	-0.13	45.04	43.98	-1.06	458.47	421.37	-37.10	458.47	775.54	317.07
N Hayes	19659	44.99	44.87	-0.12	44.99	43.93	-1.06	436.88	405.35	-31.53	436.88	781.72	344.84
N Hayes	19505	44.94	44.81	-0.13	44.94	43.89	-1.05	444.53	419.15	-25.38	444.53	807.28	362.75
N Hayes	19394	44.92	44.80	-0.12	44.92	43.87	-1.05	433.69	417.00	-16.69	433.69	783.02	349.33
N Hayes	19263	44.75	44.64	-0.11	44.75	43.71	-1.04	432.85	416.29	-16.56	432.85	782.82	349.97
N Hayes	19172	44.70	44.59	-0.11	44.70	43.68	-1.02	466.66	449.96	-16.70	466.66	784.71	318.05
N Hayes	18658	44.43	44.31	-0.12	44.43	43.53	-0.90	473.59	461.18	-12.41	473.59	795.43	321.84
N Hayes	18218	44.15	44.03	-0.12	44.15	43.43	-0.72	489.30	477.49	-11.81	489.30	786.24	296.94
N Hayes	17823	43.94	43.83	-0.11	43.94	43.33	-0.61	477.09	470.26	-6.83	477.09	770.19	293.10
N Hayes	17784	43.87	43.75	-0.12	43.87	43.32	-0.55	479.23	471.31	-7.92	479.23	767.23	288.00
N Hayes	17725	43.88	43.76	-0.12	43.88	43.08	-0.80	479.24	471.33	-7.91	479.24	732.80	253.56
N Hayes	17684	43.85	43.72	-0.13	43.85	43.07	-0.78	485.72	476.46	-9.26	485.72	737.47	251.75
N Hayes	16695	43.37	43.25	-0.12	43.37	42.80	-0.57	492.79	482.45	-10.34	492.79	747.31	254.52

N Hayes	16144	43.02	42.80	-0.22	43.02	42.67	-0.35	471.97	485.28	13.31	471.97	643.34	171.37
N Hayes	15295	42.58	42.17	-0.41	42.58	42.54	-0.04	374.76	388.01	13.25	374.76	483.16	108.40
N Hayes	14581	42.27	41.77	-0.50	42.27	42.49	0.22	425.72	428.32	2.60	425.72	451.41	25.69
N Hayes	14073	41.98	41.37	-0.61	41.98	42.30	0.32	466.22	441.37	-24.85	466.22	473.26	7.04
N Hayes	13846	41.83	41.18	-0.65	41.83	42.18	0.35	478.49	430.57	-47.92	478.49	505.40	26.91
N Hayes	13776	41.78	41.11	-0.67	41.78	42.14	0.36	475.33	424.61	-50.72	475.33	493.60	18.27
N Hayes	13476	41.58	41.01	-0.57	41.58	41.92	0.34	474.85	423.74	-51.11	474.85	488.34	13.49
N Hayes	12804	41.26	40.69	-0.57	41.26	41.57	0.31	538.01	440.69	-97.32	538.01	617.52	79.51
N Hayes	12148	40.97	40.39	-0.58	40.97	41.28	0.31	534.67	442.26	-92.41	534.67	585.91	51.24
N Hayes	11610	40.69	40.06	-0.63	40.69	41.02	0.33	579.78	481.49	-98.29	579.78	623.53	43.75
N Hayes	11065	40.22	39.52	-0.70	40.22	40.60	0.38	625.41	532.24	-93.17	625.41	672.30	46.89
N Hayes	10229	39.59	38.86	-0.73	39.59	40.02	0.43	688.05	570.83	-117.22	688.05	739.26	51.21
N Hayes	9624	39.19	38.50	-0.69	39.19	39.62	0.43	782.31	610.66	-171.65	782.31	849.98	67.67
N Hayes	9030	38.82	38.18	-0.64	38.82	39.25	0.43	787.51	621.94	-165.57	787.51	889.38	101.87
N Hayes	8148	38.23	37.65	-0.58	38.23	38.60	0.37	843.38	693.68	-149.70	843.38	953.71	110.33
N Hayes	7969	38.07	37.50	-0.57	38.07	38.42	0.35	878.86	716.88	-161.98	878.86	1001.33	122.47
N Hayes	7937	38.10	37.53	-0.57	38.10	38.46	0.36	833.17	693.75	-139.42	833.17	958.96	125.79
N Hayes	7824	38.04	37.46	-0.58	38.04	38.38	0.34	832.97	687.63	-145.34	832.97	958.67	125.70
N Hayes	7749	37.99	37.42	-0.57	37.99	38.34	0.35	829.40	690.71	-138.69	829.40	944.71	115.31
N Hayes	7678	37.88	37.33	-0.55	37.88	38.21	0.33	838.37	692.33	-146.04	838.37	954.84	116.47
N Hayes	7607	37.82	37.28	-0.54	37.82	38.14	0.32	843.72	693.27	-150.45	843.72	965.31	121.59
N Hayes	7510	37.75	37.22	-0.53	37.75	38.06	0.31	846.26	696.22	-150.04	846.26	972.05	125.79
N Hayes	7159	37.52	37.01	-0.51	37.52	37.80	0.28	817.93	700.48	-117.45	817.93	933.32	115.39
N Hayes	6711	37.26	36.72	-0.54	37.26	37.49	0.23	748.25	664.68	-83.57	748.25	838.01	89.76
N Hayes	6045	36.93	36.35	-0.58	36.93	37.16	0.23	737.80	676.24	-61.56	737.80	764.73	26.93
N Hayes	5377	36.54	35.92	-0.62	36.54	36.77	0.23	881.79	770.84	-110.95	881.79	941.54	59.75
N Hayes	4771	36.34	35.71	-0.63	36.34	36.56	0.22	954.80	799.02	-155.78	954.80	1042.83	88.03
N Hayes	3997	36.12	35.51	-0.61	36.12	36.33	0.21	1071.71	895.38	-176.33	1071.71	1138.38	66.67
N Hayes	3899	36.12	35.51	-0.61	36.12	36.34	0.22	1108.38	937.07	-171.31	1108.38	1178.51	70.13
N Hayes	3798	36.03	35.41	-0.62	36.03	36.24	0.21	1108.21	936.87	-171.34	1108.21	1178.37	70.16
N Hayes	3689	35.90	35.28	-0.62	35.90	36.12	0.22	1144.42	967.46	-176.96	1144.42	1212.75	68.33
N Hayes	3370	35.67	35.06	-0.61	35.67	35.87	0.20	1144.73	938.96	-205.77	1144.73	1201.03	56.30
N Hayes	2774	35.27	34.66	-0.61	35.27	35.44	0.17	1024.33	867.22	-157.11	1024.33	1075.78	51.45
N Hayes	2090	34.71	34.09	-0.62	34.71	34.88	0.17	1076.92	929.37	-147.55	1076.92	1129.47	52.55
N Hayes	1311	34.03	33.38	-0.65	34.03	34.21	0.18	1043.12	919.90	-123.22	1043.12	1069.28	26.16
N Hayes	706	33.39	32.75	-0.64	33.39	33.57	0.18	1057.84	925.94	-131.90	1057.84	1090.74	32.90
N Hayes	349	33.05	32.42	-0.63	33.05	33.22	0.17	1101.68	939.36	-162.32	1101.68	1149.59	47.91

 Table B-4.
 1D Resulting WSEL for Existing versus Capital Improvements Plan and Alternative (100-Year Storm)

River	River Station	Existing W.S.	CIP W.S. Elevation	Difference	Existing W.S.	ALT W.S.	Difference	Existing O Total	CIP Q Total	Difference	Existing O Total	Alt Q Total	Difference
	~~~~~~	Elevation		(2)	Elevation	Elevation	(0)	<b>Q 1 0 m</b>		( )	2		
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
W Fork	51004	58.05	58.04	-0.01	58.05	58.13	0.08	96.64	97.36	0.72	96.64	107.38	10.74
W Fork	50013	57.91	57.90	-0.01	57.91	57.96	0.05	250.44	252.34	1.90	250.44	288.21	37.77
W Fork	49293	57.82	57.80	-0.02	57.82	57.82	0.00	313.31	318.20	4.89	313.31	385.14	71.83
W Fork	48383	57.69	57.67	-0.02	57.69	57.62	-0.07	346.74	352.46	5.72	346.74	439.11	92.37
W Fork	46928	57.53	57.50	-0.03	57.53	57.34	-0.19	265.69	275.67	9.98	265.69	382.82	117.13
W Fork	46759	57.52	57.49	-0.03	57.52	57.32	-0.20	259.56	270.78	11.22	259.56	382.63	123.07
W Fork	46225	57.51	57.47	-0.04	57.51	57.26	-0.25	195.29	211.84	16.55	195.29	347.39	152.10
W Fork	45659	57.50	57.46	-0.04	57.50	57.21	-0.29	120.37	142.95	22.58	120.37	307.51	187.14
W Fork	45050	57.50	57.46	-0.04	57.50	57.17	-0.33	23.41	50.43	27.02	23.41	287.96	264.55
W Fork	44689	57.50	57.46	-0.04	57.50	57.16	-0.34	-123.20	-100.47	22.73	-123.20	200.51	323.71
W Fork	44447	57.49	57.45	-0.04	57.49	57.16	-0.33	-323.16	-304.21	18.95	-323.16	55.06	378.22
W Fork	44363	57.49	57.45	-0.04	57.49	57.16	-0.33	-385.89	-366.63	19.26	-385.89	24.87	410.76
W Fork	44263	57.56	57.51	-0.05	57.56	57.16	-0.40	-435.22	-413.95	21.27	-435.22	13.90	449.12
W Fork	44147	57.55	57.50	-0.05	57.55	57.16	-0.39	-585.24	-562.33	22.91	-585.24	-91.15	494.09
W Fork	43626	57.13	57.03	-0.10	57.13	56.79	-0.34	1270.59	1292.77	22.18	1270.59	1931.68	661.09
W Fork	43089	56.77	56.59	-0.18	56.77	56.46	-0.31	1046.36	1099.55	53.19	1046.36	1882.70	836.34
W Fork	42405	56.44	56.22	-0.22	56.44	56.07	-0.37	864.57	853.92	-10.65	864.57	1511.43	646.86
W Fork	41481	56.14	56.07	-0.07	56.14	55.83	-0.31	719.60	301.93	-417.67	719.60	731.79	12.19
W Fork	40328	55.85	55.80	-0.05	55.85	55.71	-0.14	763.84	871.31	107.47	763.84	759.52	-4.32
W Fork	39472	55.79	55.71	-0.08	55.79	55.63	-0.16	277.15	412.84	135.69	277.15	886.44	609.29
W Fork	38398	55.57	55.47	-0.10	55.57	55.50	-0.07	699.58	674.92	-24.66	699.58	1212.59	513.01
W Fork	38222	55.55	55.46	-0.09	55.55	55.48	-0.07	596.36	573.98	-22.38	596.36	1126.50	530.14
W Fork	38170	55.53	55.43	-0.10	55.53	55.46	-0.07	567.17	550.66	-16.51	567.17	993.57	426.40
W Fork	38079	55.45	55.36	-0.09	55.45	55.22	-0.23	539.72	540.33	0.61	539.72	952.26	412.54
W Fork	38058	55.45	55.35	-0.10	55.45	55.23	-0.22	544.26	543.16	-1.10	544.26	989.36	445.10
W Fork	37923	55.43	55.33	-0.10	55.43	55.21	-0.22	525.76	538.69	12.93	525.76	1091.33	565.57
W Fork	37297	55.34	55.23	-0.11	55.34	55.12	-0.22	521.55	534.66	13.11	521.55	1294.81	773.26
W Fork	36707	55.26	55.15	-0.11	55.26	55.03	-0.23	473.53	468.56	-4.97	473.53	1271.11	797.58
W Fork	36123	55.17	55.06	-0.11	55.17	54.95	-0.22	502.48	497.66	-4.82	502.48	1353.30	850.82
W Fork	35439	55.05	54.93	-0.12	55.05	54.82	-0.23	598.42	590.24	-8.18	598.42	1449.13	850.71
W Fork	33855	54.91	54.79	-0.12	54.91	54.63	-0.28	340.60	334.98	-5.62	340.60	1334.06	993.46
W Fork	33191	54.62	54.49	-0.13	54.62	54.41	-0.21	1438.02	1406.43	-31.59	1438.02	2695.98	1257.96
W Fork	32646	54.27	54.14	-0.13	54.27	54.22	-0.05	1678.63	1635.34	-43.29	1678.63	2785.66	1107.03
W Fork	32138	53.86	53.74	-0.12	53.86	53.87	0.01	2494.07	2429.59	-64.48	2494.07	3256.09	762.02
W Fork	32096	53.86	53.73	-0.13	53.86	53.87	0.01	2515.25	2448.44	-66.81	2515.25	3283.40	768.15
W Fork	31777	53.41	53.31	-0.10	53.41	53.08	-0.33	2514.27	2447.43	-66.84	2514.27	3282.67	768.40

W Fork	31726	53.39	53.29	-0.10	53.39	53.08	-0.31	2510.28	2440.50	-69.78	2510.28	3345.28	835.00
W Fork	31011	52.99	52.90	-0.09	52.99	52.69	-0.30	1535.61	1492.74	-42.87	1535.61	2761.78	1226.17
W Fork	30397	52.65	52.56	-0.09	52.65	52.28	-0.37	982.94	954.62	-28.32	982.94	2650.54	1667.60
W Fork	29875	52.41	52.32	-0.09	52.41	52.00	-0.41	1005.37	981.61	-23.76	1005.37	2599.57	1594.20
W Fork	29493	52.35	52.25	-0.10	52.35	51.85	-0.50	735.78	720.06	-15.72	735.78	2613.22	1877.44
W Fork	27829	51.48	51.39	-0.09	51.48	51.46	-0.02	1182.07	1153.81	-28.26	1182.07	2462.20	1280.13
W Fork	27814	51.46	51.38	-0.08	51.46	51.45	-0.01	1181.87	1153.89	-27.98	1181.87	2405.31	1223.44
W Fork	27717	51.39	51.31	-0.08	51.39	50.79	-0.60	1181.87	1153.85	-28.02	1181.87	2404.94	1223.07
W Fork	27700	51.38	51.30	-0.08	51.38	50.78	-0.60	1182.16	1154.10	-28.06	1182.16	2451.93	1269.77
W Fork	27474	51.20	51.12	-0.08	51.20	50.65	-0.55	1182.04	1159.86	-22.18	1182.04	2353.45	1171.41
W Fork	27110	51.04	50.96	-0.08	51.04	50.61	-0.43	936.55	918.62	-17.93	936.55	1740.96	804.41
W Fork	27070	51.00	50.92	-0.08	51.00	50.60	-0.40	908.58	892.13	-16.45	908.58	1644.12	735.54
W Fork	27053	50.95	50.87	-0.08	50.95	49.91	-1.04	908.56	892.08	-16.48	908.56	1644.00	735.44
W Fork	27004	50.92	50.85	-0.07	50.92	49.89	-1.03	949.19	934.34	-14.85	949.19	1623.63	674.44
W Fork	26409	50.66	50.58	-0.08	50.66	49.79	-0.87	1018.03	1002.25	-15.78	1018.03	1293.97	275.94
W Fork	25744	50.49	50.41	-0.08	50.49	49.71	-0.78	837.03	828.01	-9.02	837.03	1106.02	268.99
W Fork	24706	50.26	50.18	-0.08	50.26	49.59	-0.67	969.38	948.14	-21.24	969.38	1202.06	232.68
W Fork	24589	50.20	50.12	-0.08	50.20	49.58	-0.62	963.76	943.19	-20.57	963.76	1269.41	305.65
W Fork	24122	50.01	49.93	-0.08	50.01	49.50	-0.51	1050.04	1024.41	-25.63	1050.04	1759.15	709.11
W Fork	23947	49.91	49.84	-0.07	49.91	49.45	-0.46	1067.60	1038.96	-28.64	1067.60	2153.17	1085.57
W Fork	23604	49.77	49.69	-0.08	49.77	49.27	-0.50	1214.79	1178.04	-36.75	1214.79	2509.38	1294.59
W Fork	23518	49.71	49.63	-0.08	49.71	49.21	-0.50	1371.64	1347.68	-23.96	1371.64	2626.19	1254.55
W Fork	23373	49.61	49.54	-0.07	49.61	48.68	-0.93	1371.17	1347.09	-24.08	1371.17	2622.99	1251.82
W Fork	23306	49.57	49.50	-0.07	49.57	48.61	-0.96	1336.72	1312.46	-24.26	1336.72	2667.17	1330.45
W Fork	22672	48.97	48.90	-0.07	48.97	47.99	-0.98	1313.04	1288.24	-24.80	1313.04	3249.68	1936.64
W Fork	22162	48.63	48.56	-0.07	48.63	47.81	-0.82	1539.24	1520.55	-18.69	1539.24	3446.70	1907.46
W Fork	21791	48.45	48.37	-0.08	48.45	47.69	-0.76	1315.56	1301.50	-14.06	1315.56	3478.09	2162.53
W Fork	21283	48.29	48.21	-0.08	48.29	47.53	-0.76	1110.52	1098.95	-11.57	1110.52	3381.76	2271.24
W Fork	20513	47.84	47.76	-0.08	47.84	47.28	-0.56	1544.29	1528.15	-16.14	1544.29	3437.95	1893.66
W Fork	19920	47.48	47.40	-0.08	47.48	47.10	-0.38	1409.74	1387.62	-22.12	1409.74	3669.86	2260.12
W Fork	19519	47.34	47.26	-0.08	47.34	46.97	-0.37	1316.43	1303.14	-13.29	1316.43	3598.65	2282.22
W Fork	19452	47.37	47.28	-0.09	47.37	46.98	-0.39	1155.81	1138.47	-17.34	1155.81	3576.92	2421.11
W Fork	19439	47.36	47.27	-0.09	47.36	46.97	-0.39	1083.04	1064.91	-18.13	1083.04	3557.76	2474.72
W Fork	19366	47.32	47.24	-0.08	47.32	46.95	-0.37	1085.97	1067.74	-18.23	1085.97	3531.43	2445.46
W Fork	18605	46.94	46.85	-0.09	46.94	46.75	-0.19	1086.42	1074.37	-12.05	1086.42	3249.63	2163.21
W Fork	17779	46.52	46.41	-0.11	46.52	46.63	0.11	1198.57	1204.74	6.17	1198.57	2623.68	1425.11
W Fork	17721	46.48	46.37	-0.11	46.48	46.65	0.17	1205.65	1222.76	17.11	1205.65	2313.69	1108.04
W Fork	17656	46.30	46.18	-0.12	46.30	45.75	-0.55	1203.43	1220.46	17.03	1203.43	2265.29	1061.86
W Fork	17575	46.27	46.14	-0.13	46.27	45.72	-0.55	1246.12	1267.36	21.24	1246.12	2555.23	1309.11
W Fork	16646	45.93	45.77	-0.16	45.93	45.51	-0.42	1445.34	1480.69	35.35	1445.34	2952.08	1506.74
W Fork	15846	45.62	45.58	-0.04	45.62	45.42	-0.20	1340.85	985.58	-355.27	1340.85	2467.53	1126.68

W Fork	15394	45.41	45.42	0.01	45.41	45.38	-0.03	1370.63	1174.84	-195.79	1370.63	2373.33	1002.70
W Fork	14911	45.27	45.30	0.03	45.27	45.35	0.08	1182.86	1081.27	-101.59	1182.86	1910.14	727.28
W Fork	14440	45.12	45.18	0.06	45.12	45.30	0.18	1272.59	1156.96	-115.63	1272.59	1655.59	383.00
W Fork	13933	44.92	44.86	-0.06	44.92	45.19	0.27	1492.81	1814.32	321.51	1492.81	1755.39	262.58
W Fork	13771	44.86	44.77	-0.09	44.86	45.17	0.31	1492.44	1795.49	303.05	1492.44	1670.40	177.96
W Fork	13736	44.84	44.74	-0.10	44.84	45.16	0.32	1494.61	1783.25	288.64	1494.61	1663.53	168.92
W Fork	13713	44.78	44.65	-0.13	44.78	45.09	0.31	1494.23	1782.46	288.23	1494.23	1663.21	168.98
W Fork	13680	44.78	44.66	-0.12	44.78	45.09	0.31	1538.16	1789.84	251.68	1538.16	1704.82	166.66
W Fork	13220	44.49	44.37	-0.12	44.49	44.93	0.44	1963.54	1950.11	-13.43	1963.54	2368.47	404.93
W Fork	12944	44.35	44.25	-0.10	44.35	44.81	0.46	1997.70	1891.98	-105.72	1997.70	2306.36	308.66
W Fork	12854	44.31	44.20	-0.11	44.31	44.81	0.50	1845.99	1807.55	-38.44	1845.99	2052.39	206.40
W Fork	12769	43.96	43.85	-0.11	43.96	44.42	0.46	1845.16	1806.66	-38.50	1845.16	2051.91	206.75
W Fork	12703	43.81	43.71	-0.10	43.81	44.24	0.43	1866.74	1797.65	-69.09	1866.74	2100.48	233.74
W Fork	12244	43.57	43.48	-0.09	43.57	44.01	0.44	1429.64	1362.80	-66.84	1429.64	1489.39	59.75
W Fork	11115	42.70	42.63	-0.07	42.70	43.01	0.31	1557.52	1535.58	-21.94	1557.52	1635.92	78.40
W Fork	11040	42.70	42.62	-0.08	42.70	42.99	0.29	1693.13	1669.67	-23.46	1693.13	1816.88	123.75
W Fork	10968	42.67	42.60	-0.07	42.67	42.97	0.30	1790.40	1775.70	-14.70	1790.40	1924.79	134.39
W Fork	10945	42.65	42.57	-0.08	42.65	42.95	0.30	1797.16	1784.51	-12.65	1797.16	1936.61	139.45
W Fork	9364	41.94	41.86	-0.08	41.94	42.23	0.29	1312.00	1304.15	-7.85	1312.00	1451.45	139.45
W Fork	8384	41.37	41.26	-0.11	41.37	41.71	0.34	1639.46	1647.51	8.05	1639.46	1776.45	136.99
W Fork	8352	41.37	41.27	-0.10	41.37	41.74	0.37	1600.42	1541.96	-58.46	1600.42	1647.72	47.30
W Fork	8320	41.20	41.09	-0.11	41.20	41.53	0.33	943.73	1540.76	597.03	943.73	1559.66	615.93
W Fork	8282	41.14	41.07	-0.07	41.14	41.47	0.33	1693.65	1612.75	-80.90	1693.65	1865.61	171.96
W Fork	7427	40.67	40.60	-0.07	40.67	40.97	0.30	1329.44	1303.28	-26.16	1329.44	1491.15	161.71
W Fork	6777	40.33	40.27	-0.06	40.33	40.63	0.30	1426.30	1399.35	-26.95	1426.30	1523.68	97.38
W Fork	6131	39.97	39.91	-0.06	39.97	40.32	0.35	1591.60	1569.34	-22.26	1591.60	1585.57	-6.03
W Fork	5494	39.60	39.54	-0.06	39.60	39.93	0.33	1671.10	1644.68	-26.42	1671.10	1825.36	154.26
W Fork	5087	39.36	39.30	-0.06	39.36	39.65	0.29	1597.07	1574.63	-22.44	1597.07	1863.99	266.92
W Fork	4024	38.85	38.78	-0.07	38.85	39.13	0.28	1326.84	1312.61	-14.23	1326.84	1435.55	108.71
W Fork	2968	38.20	38.14	-0.06	38.20	38.46	0.26	1572.50	1549.88	-22.62	1572.50	1681.47	108.97
W Fork	2449	37.89	37.84	-0.05	37.89	38.15	0.26	1661.08	1636.56	-24.52	1661.08	1781.52	120.44
W Fork	1392	37.56	37.50	-0.06	37.56	37.80	0.24	1328.63	1322.07	-6.56	1328.63	1385.17	56.54
W Fork	165	37.33	37.28	-0.05	37.33	37.58	0.25	1092.67	1080.27	-12.40	1092.67	1148.96	56.29
S Hayes	37203	53.75	53.75	0.00	53.75	53.74	-0.01	118.43	118.43	0.00	118.43	118.47	0.04
S Hayes	36329	53.54	53.54	0.00	53.54	53.53	-0.01	205.19	205.35	0.16	205.19	201.97	-3.22
S Hayes	34868	52.95	52.95	0.00	52.95	52.81	-0.14	318.36	318.45	0.09	318.36	345.35	26.99
S Hayes	34779	52.93	52.93	0.00	52.93	52.77	-0.16	330.81	330.79	-0.02	330.81	355.32	24.51
S Hayes	34618	52.73	52.73	0.00	52.73	52.56	-0.17	328.89	328.94	0.05	328.89	354.52	25.63
S Hayes	34512	52.66	52.66	0.00	52.66	52.46	-0.20	300.76	300.70	-0.06	300.76	353.48	52.72
S Hayes	34331	52.53	52.53	0.00	52.53	52.34	-0.19	327.93	327.94	0.01	327.93	350.11	22.18
S Hayes	33541	52.13	52.13	0.00	52.13	51.91	-0.22	310.51	310.55	0.04	310.51	311.41	0.90

S Hayes	32687	51.77	51.77	0.00	51.77	51.58	-0.19	329.24	329.27	0.03	329.24	350.98	21.74
S Hayes	32190	51.66	51.66	0.00	51.66	51.46	-0.20	250.71	250.77	0.06	250.71	366.88	116.17
S Hayes	32114	51.65	51.65	0.00	51.65	51.45	-0.20	259.58	259.69	0.11	259.58	335.29	75.71
S Hayes	31903	51.45	51.45	0.00	51.45	51.17	-0.28	259.26	259.31	0.05	259.26	334.82	75.56
S Hayes	31806	51.42	51.42	0.00	51.42	51.14	-0.28	279.45	279.54	0.09	279.45	415.37	135.92
S Hayes	31054	51.26	51.26	0.00	51.26	50.97	-0.29	302.56	302.60	0.04	302.56	373.99	71.43
S Hayes	30342	51.09	51.09	0.00	51.09	50.77	-0.32	361.76	361.78	0.02	361.76	456.06	94.30
S Hayes	30248	51.09	51.09	0.00	51.09	50.76	-0.33	347.81	347.80	-0.01	347.81	385.57	37.76
S Hayes	30101	50.82	50.82	0.00	50.82	50.51	-0.31	344.61	344.62	0.01	344.61	385.24	40.63
S Hayes	30007	50.79	50.79	0.00	50.79	50.47	-0.32	358.71	358.70	-0.01	358.71	485.71	127.00
S Hayes	29429	50.64	50.64	0.00	50.64	50.32	-0.32	398.58	398.58	0.00	398.58	467.99	69.41
S Hayes	29291	50.59	50.59	0.00	50.59	50.30	-0.29	416.86	416.82	-0.04	416.86	391.97	-24.89
S Hayes	29262	50.59	50.59	0.00	50.59	50.30	-0.29	419.66	419.50	-0.16	419.66	367.63	-52.03
S Hayes	29140	50.33	50.33	0.00	50.33	50.08	-0.25	398.81	399.09	0.28	398.81	365.98	-32.83
S Hayes	29063	50.32	50.32	0.00	50.32	50.05	-0.27	386.66	386.75	0.09	386.66	393.30	6.64
S Hayes	28680	50.22	50.22	0.00	50.22	49.92	-0.30	351.38	351.53	0.15	351.38	440.96	89.58
S Hayes	28085	50.14	50.14	0.00	50.14	49.73	-0.41	274.85	275.08	0.23	274.85	442.16	167.31
S Hayes	27494	50.09	50.09	0.00	50.09	49.63	-0.46	283.89	284.16	0.27	283.89	392.53	108.64
S Hayes	27067	49.98	49.98	0.00	49.98	49.49	-0.49	509.55	509.55	0.00	509.55	628.76	119.21
S Hayes	26377	49.80	49.80	0.00	49.80	49.31	-0.49	466.54	466.45	-0.09	466.54	496.23	29.69
S Hayes	25799	49.72	49.72	0.00	49.72	49.17	-0.55	286.96	287.02	0.06	286.96	553.61	266.65
S Hayes	24663	49.30	49.30	0.00	49.30	48.83	-0.47	687.82	688.17	0.35	687.82	658.61	-29.21
S Hayes	24358	48.72	48.72	0.00	48.72	48.16	-0.56	1128.43	1128.77	0.34	1128.43	1260.77	132.34
S Hayes	24279	48.64	48.64	0.00	48.64	47.88	-0.76	1143.35	1143.58	0.23	1143.35	1495.30	351.95
S Hayes	23735	48.44	48.44	0.00	48.44	47.59	-0.85	1143.23	1143.43	0.20	1143.23	1495.05	351.82
S Hayes	23636	48.24	48.24	0.00	48.24	47.47	-0.77	1194.82	1195.05	0.23	1194.82	1681.12	486.30
S Hayes	23016	47.86	47.85	-0.01	47.86	47.09	-0.77	745.54	746.38	0.84	745.54	1543.69	798.15
S Hayes	22457	47.58	47.57	-0.01	47.58	46.73	-0.85	678.00	679.19	1.19	678.00	1575.12	897.12
S Hayes	22221	47.47	47.46	-0.01	47.47	46.61	-0.86	698.64	700.10	1.46	698.64	1569.56	870.92
S Hayes	21326	47.09	47.09	0.00	47.09	46.17	-0.92	634.68	637.94	3.26	634.68	1586.78	952.10
S Hayes	20923	46.77	46.75	-0.02	46.77	45.98	-0.79	799.08	806.34	7.26	799.08	1582.24	783.16
S Hayes	20417	46.35	46.32	-0.03	46.35	45.66	-0.69	837.06	845.08	8.02	837.06	1586.95	749.89
S Hayes	19676	45.75	45.67	-0.08	45.75	45.14	-0.61	808.42	823.20	14.78	808.42	1457.19	648.77
S Hayes	19089	45.42	45.29	-0.13	45.42	44.66	-0.76	769.27	794.83	25.56	769.27	1450.31	681.04
S Hayes	18667	45.23	45.06	-0.17	45.23	44.39	-0.84	704.23	733.88	29.65	704.23	1385.78	681.55
S Hayes	18131	44.93	44.69	-0.24	44.93	43.99	-0.94	722.77	778.83	56.06	722.77	1392.82	670.05
S Hayes	18011	44.90	44.61	-0.29	44.90	43.95	-0.95	685.70	813.63	127.93	685.70	1261.77	576.07
S Hayes	17882	44.70	44.32	-0.38	44.70	43.38	-1.32	680.77	811.82	131.05	680.77	1261.75	580.98
S Hayes	17819	44.57	44.17	-0.40	44.57	43.17	-1.40	1009.55	1121.00	111.45	1009.55	1609.65	600.10
S Hayes	17625	44.37	44.10	-0.27	44.37	43.02	-1.35	1001.76	746.34	-255.42	1001.76	1544.93	543.17
S Hayes	16929	43.85	43.92	0.07	43.85	42.67	-1.18	829.52	372.04	-457.48	829.52	1256.46	426.94

S Hayes	16252	43.39	43.72	0.33	43.39	42.56	-0.83	742.89	549.75	-193.14	742.89	777.29	34.40
S Hayes	15710	43.03	43.46	0.43	43.03	42.53	-0.50	717.70	702.35	-15.35	717.70	577.86	-139.84
S Hayes	15029	42.70	42.98	0.28	42.70	42.50	-0.20	659.28	919.37	260.09	659.28	558.90	-100.38
S Hayes	14384	42.42	42.54	0.12	42.42	42.46	0.04	652.62	837.79	185.17	652.62	607.80	-44.82
S Hayes	14005	42.24	42.30	0.06	42.24	42.33	0.09	636.56	760.41	123.85	636.56	683.00	46.44
S Hayes	13292	41.85	41.85	0.00	41.85	41.94	0.09	648.53	684.76	36.23	648.53	697.44	48.91
S Hayes	12382	41.40	41.37	-0.03	41.40	41.53	0.13	636.35	644.36	8.01	636.35	642.64	6.29
S Hayes	11488	40.87	40.83	-0.04	40.87	41.04	0.17	598.23	604.30	6.07	598.23	604.32	6.09
S Hayes	10519	39.95	39.90	-0.05	39.95	40.04	0.09	630.78	623.69	-7.09	630.78	619.83	-10.95
S Hayes	10267	39.73	39.67	-0.06	39.73	39.81	0.08	630.60	623.31	-7.29	630.60	619.43	-11.17
S Hayes	9653	39.34	39.28	-0.06	39.34	39.41	0.07	644.05	635.11	-8.94	644.05	650.80	6.75
S Hayes	9246	39.07	39.01	-0.06	39.07	39.14	0.07	642.43	632.72	-9.71	642.43	648.81	6.38
S Hayes	8443	38.57	38.51	-0.06	38.57	38.66	0.09	597.82	588.82	-9.00	597.82	595.39	-2.43
S Hayes	7748	38.30	38.23	-0.07	38.30	38.40	0.10	438.64	452.59	13.95	438.64	415.53	-23.11
S Hayes	6801	37.43	37.33	-0.10	37.43	37.62	0.19	541.96	529.49	-12.47	541.96	525.43	-16.53
S Hayes	6039	36.68	36.55	-0.13	36.68	36.98	0.30	546.86	533.47	-13.39	546.86	524.95	-21.91
S Hayes	5587	36.25	36.12	-0.13	36.25	36.56	0.31	630.06	611.89	-18.17	630.06	599.08	-30.98
S Hayes	4889	35.46	35.30	-0.16	35.46	35.65	0.19	627.07	613.03	-14.04	627.07	579.13	-47.94
S Hayes	4426	35.00	34.84	-0.16	35.00	35.13	0.13	684.29	657.56	-26.73	684.29	676.34	-7.95
S Hayes	3865	34.55	34.41	-0.14	34.55	34.69	0.14	732.11	700.80	-31.31	732.11	743.82	11.71
S Hayes	3683	34.51	34.36	-0.15	34.51	34.64	0.13	724.49	686.54	-37.95	724.49	744.86	20.37
S Hayes	3538	34.37	34.24	-0.13	34.37	34.49	0.12	724.37	686.42	-37.95	724.37	744.43	20.06
S Hayes	3380	34.26	34.13	-0.13	34.26	34.38	0.12	722.37	685.40	-36.97	722.37	736.84	14.47
S Hayes	2974	33.93	33.80	-0.13	33.93	34.02	0.09	624.23	605.13	-19.10	624.23	621.46	-2.77
S Hayes	2913	33.91	33.77	-0.14	33.91	34.01	0.10	609.77	595.69	-14.08	609.77	603.53	-6.24
S Hayes	2835	33.55	33.43	-0.12	33.55	33.66	0.11	609.00	594.53	-14.47	609.00	601.03	-7.97
S Hayes	2769	33.49	33.38	-0.11	33.49	33.60	0.11	608.84	594.30	-14.54	608.84	600.54	-8.30
S Hayes	2619	33.37	33.24	-0.13	33.37	33.48	0.11	601.33	590.00	-11.33	601.33	589.31	-12.02
S Hayes	2137	33.00	32.85	-0.15	33.00	33.15	0.15	530.35	531.55	1.20	530.35	513.94	-16.41
S Hayes	1905	32.90	32.75	-0.15	32.90	33.06	0.16	536.59	526.26	-10.33	536.59	531.89	-4.70
S Hayes	1622	32.81	32.65	-0.16	32.81	32.97	0.16	532.57	520.42	-12.15	532.57	527.17	-5.40
S Hayes	1185	32.70	32.55	-0.15	32.70	32.88	0.18	525.26	508.88	-16.38	525.26	512.26	-13.00
S Hayes	707	32.67	32.51	-0.16	32.67	32.86	0.19	337.66	344.32	6.66	337.66	302.61	-35.05
S Hayes	284	32.64	32.48	-0.16	32.64	32.83	0.19	343.06	330.75	-12.31	343.06	357.65	14.59
N Hayes	30961	50.40	50.40	0.00	50.40	50.37	-0.03	187.23	187.29	0.06	187.23	181.24	-5.99
N Hayes	30742	50.30	50.30	0.00	50.30	50.28	-0.02	174.76	174.72	-0.04	174.76	168.42	-6.34
N Hayes	30356	50.16	50.16	0.00	50.16	50.13	-0.03	230.94	231.00	0.06	230.94	234.77	3.83
N Hayes	30123	50.10	50.10	0.00	50.10	50.06	-0.04	182.37	182.47	0.10	182.37	189.85	7.48
N Hayes	29703	50.00	50.00	0.00	50.00	49.94	-0.06	182.31	182.45	0.14	182.31	199.75	17.44
N Hayes	29123	49.85	49.85	0.00	49.85	49.73	-0.12	233.88	234.04	0.16	233.88	276.53	42.65
N Hayes	28748	49.77	49.77	0.00	49.77	49.59	-0.18	238.97	239.28	0.31	238.97	296.21	57.24

N Hayes	28652	49.75	49.75	0.00	49.75	49.56	-0.19	235.52	235.90	0.38	235.52	295.15	59.63
N Hayes	28558	49.68	49.68	0.00	49.68	49.42	-0.26	235.01	235.37	0.36	235.01	295.00	59.99
N Hayes	28513	49.67	49.67	0.00	49.67	49.39	-0.28	242.67	243.05	0.38	242.67	311.65	68.98
N Hayes	28169	49.58	49.58	0.00	49.58	49.20	-0.38	294.28	294.84	0.56	294.28	396.04	101.76
N Hayes	27721	49.44	49.44	0.00	49.44	48.68	-0.76	318.08	318.68	0.60	318.08	509.00	190.92
N Hayes	27362	49.30	49.30	0.00	49.30	48.11	-1.19	423.56	424.15	0.59	423.56	614.04	190.48
N Hayes	27197	49.24	49.23	-0.01	49.24	47.83	-1.41	572.20	573.07	0.87	572.20	724.44	152.24
N Hayes	26405	49.18	49.18	0.00	49.18	47.81	-1.37	572.20	573.05	0.85	572.20	724.31	152.11
N Hayes	26348	49.12	49.12	0.00	49.12	47.81	-1.31	510.73	511.68	0.95	510.73	688.62	177.89
N Hayes	25970	48.79	48.78	-0.01	48.79	47.65	-1.14	480.37	482.15	1.78	480.37	708.32	227.95
N Hayes	25468	48.50	48.49	-0.01	48.50	47.44	-1.06	412.24	415.49	3.25	412.24	716.85	304.61
N Hayes	25135	48.35	48.33	-0.02	48.35	47.32	-1.03	397.44	401.14	3.70	397.44	734.91	337.47
N Hayes	24504	47.99	47.96	-0.03	47.99	47.07	-0.92	423.69	430.28	6.59	423.69	772.65	348.96
N Hayes	23880	47.54	47.44	-0.10	47.54	46.81	-0.73	368.72	381.96	13.24	368.72	788.75	420.03
N Hayes	23475	47.24	47.11	-0.13	47.24	46.67	-0.57	382.74	388.20	5.46	382.74	781.10	398.36
N Hayes	23175	47.01	46.85	-0.16	47.01	46.56	-0.45	408.45	406.79	-1.66	408.45	778.56	370.11
N Hayes	22938	46.85	46.65	-0.20	46.85	46.49	-0.36	375.13	385.74	10.61	375.13	774.41	399.28
N Hayes	22883	46.84	46.63	-0.21	46.84	46.48	-0.36	372.69	387.70	15.01	372.69	729.46	356.77
N Hayes	22839	46.84	46.62	-0.22	46.84	46.48	-0.36	342.63	389.54	46.91	342.63	685.60	342.97
N Hayes	22732	46.57	46.26	-0.31	46.57	45.54	-1.03	342.15	379.84	37.69	342.15	685.56	343.41
N Hayes	22663	46.54	46.21	-0.33	46.54	45.50	-1.04	347.44	379.86	32.42	347.44	736.72	389.28
N Hayes	22356	46.41	46.04	-0.37	46.41	45.34	-1.07	375.49	385.76	10.27	375.49	776.58	401.09
N Hayes	21810	46.13	45.94	-0.19	46.13	45.08	-1.05	405.56	155.88	-249.68	405.56	822.53	416.97
N Hayes	21491	45.99	45.92	-0.07	45.99	44.93	-1.06	420.15	159.97	-260.18	420.15	824.35	404.20
N Hayes	20586	45.63	45.74	0.11	45.63	44.67	-0.96	430.30	369.67	-60.63	430.30	761.39	331.09
N Hayes	20278	45.53	45.54	0.01	45.53	44.60	-0.93	403.76	568.69	164.93	403.76	765.31	361.55
N Hayes	20159	45.52	45.54	0.02	45.52	44.58	-0.94	407.11	500.99	93.88	407.11	770.50	363.39
N Hayes	19934	45.43	45.41	-0.02	45.43	44.32	-1.11	404.90	496.42	91.52	404.90	768.77	363.87
N Hayes	19841	45.40	45.37	-0.03	45.40	44.29	-1.11	452.04	496.72	44.68	452.04	805.86	353.82
N Hayes	19659	45.36	45.33	-0.03	45.36	44.24	-1.12	448.08	472.40	24.32	448.08	814.61	366.53
N Hayes	19505	45.31	45.28	-0.03	45.31	44.20	-1.11	477.96	495.02	17.06	477.96	871.21	393.25
N Hayes	19394	45.30	45.26	-0.04	45.30	44.19	-1.11	479.85	490.55	10.70	479.85	802.01	322.16
N Hayes	19263	45.11	45.06	-0.05	45.11	43.87	-1.24	479.49	489.86	10.37	479.49	801.70	322.21
N Hayes	19172	45.05	45.01	-0.04	45.05	43.84	-1.21	532.18	537.68	5.50	532.18	803.97	271.79
N Hayes	18658	44.78	44.72	-0.06	44.78	43.70	-1.08	539.23	536.98	-2.25	539.23	816.04	276.81
N Hayes	18218	44.46	44.41	-0.05	44.46	43.61	-0.85	544.23	544.57	0.34	544.23	794.62	250.39
N Hayes	17823	44.24	44.18	-0.06	44.24	43.53	-0.71	524.09	529.91	5.82	524.09	763.53	239.44
N Hayes	17784	44.16	44.09	-0.07	44.16	43.52	-0.64	527.84	533.77	5.93	527.84	757.01	229.17
N Hayes	17725	44.17	44.10	-0.07	44.17	43.29	-0.88	527.87	533.77	5.90	527.87	756.76	228.89
N Hayes	17684	44.14	44.07	-0.07	44.14	43.27	-0.87	537.79	543.63	5.84	537.79	765.07	227.28
N Hayes	16695	43.64	43.55	-0.09	43.64	43.00	-0.64	540.53	529.47	-11.06	540.53	800.56	260.03

N Hayes	16144	43.30	43.21	-0.09	43.30	42.87	-0.43	514.70	489.90	-24.80	514.70	665.03	150.33
N Hayes	15295	42.91	42.81	-0.10	42.91	42.77	-0.14	381.89	390.48	8.59	381.89	448.61	66.72
N Hayes	14581	42.67	42.56	-0.11	42.67	42.73	0.06	434.36	431.44	-2.92	434.36	414.64	-19.72
N Hayes	14073	42.46	42.32	-0.14	42.46	42.59	0.13	482.37	474.65	-7.72	482.37	459.06	-23.31
N Hayes	13846	42.34	42.18	-0.16	42.34	42.48	0.14	508.77	527.54	18.77	508.77	504.45	-4.32
N Hayes	13776	42.29	42.12	-0.17	42.29	42.45	0.16	511.99	528.51	16.52	511.99	496.75	-15.24
N Hayes	13476	42.07	41.89	-0.18	42.07	42.25	0.18	511.97	528.45	16.48	511.97	495.24	-16.73
N Hayes	12804	41.75	41.55	-0.20	41.75	41.94	0.19	626.11	599.47	-26.64	626.11	639.58	13.47
N Hayes	12148	41.49	41.27	-0.22	41.49	41.69	0.20	598.97	578.60	-20.37	598.97	613.31	14.34
N Hayes	11610	41.24	41.01	-0.23	41.24	41.45	0.21	654.54	623.84	-30.70	654.54	691.27	36.73
N Hayes	11065	40.84	40.58	-0.26	40.84	41.06	0.22	703.38	672.92	-30.46	703.38	750.36	46.98
N Hayes	10229	40.29	40.01	-0.28	40.29	40.54	0.25	749.22	727.38	-21.84	749.22	804.19	54.97
N Hayes	9624	39.86	39.57	-0.29	39.86	40.16	0.30	948.74	891.66	-57.08	948.74	936.54	-12.20
N Hayes	9030	39.46	39.19	-0.27	39.46	39.76	0.30	954.84	891.48	-63.36	954.84	1009.62	54.78
N Hayes	8148	38.80	38.53	-0.27	38.80	39.08	0.28	1001.58	941.69	-59.89	1001.58	1089.92	88.34
N Hayes	7969	38.62	38.36	-0.26	38.62	38.89	0.27	1048.96	982.96	-66.00	1048.96	1153.34	104.38
N Hayes	7937	38.66	38.40	-0.26	38.66	38.93	0.27	1007.05	937.15	-69.90	1007.05	1112.84	105.79
N Hayes	7824	38.59	38.33	-0.26	38.59	38.86	0.27	1006.91	936.98	-69.93	1006.91	1111.77	104.86
N Hayes	7749	38.56	38.29	-0.27	38.56	38.83	0.27	981.62	924.05	-57.57	981.62	1077.58	95.96
N Hayes	7678	38.44	38.17	-0.27	38.44	38.70	0.26	988.26	933.48	-54.78	988.26	1083.85	95.59
N Hayes	7607	38.36	38.10	-0.26	38.36	38.63	0.27	998.76	941.89	-56.87	998.76	1096.53	97.77
N Hayes	7510	38.29	38.02	-0.27	38.29	38.56	0.27	1003.22	945.73	-57.49	1003.22	1096.91	93.69
N Hayes	7159	38.06	37.77	-0.29	38.06	38.33	0.27	944.71	904.97	-39.74	944.71	1016.08	71.37
N Hayes	6711	37.79	37.49	-0.30	37.79	38.06	0.27	842.40	816.06	-26.34	842.40	895.29	52.89
N Hayes	6045	37.50	37.16	-0.34	37.50	37.77	0.27	794.49	777.13	-17.36	794.49	826.36	31.87
N Hayes	5377	37.10	36.77	-0.33	37.10	37.38	0.28	1009.02	941.84	-67.18	1009.02	1095.31	86.29
N Hayes	4771	36.88	36.57	-0.31	36.88	37.16	0.28	1153.92	1040.07	-113.85	1153.92	1276.84	122.92
N Hayes	3997	36.63	36.33	-0.30	36.63	36.89	0.26	1280.35	1154.34	-126.01	1280.35	1386.71	106.36
N Hayes	3899	36.63	36.33	-0.30	36.63	36.89	0.26	1322.72	1192.83	-129.89	1322.72	1433.53	110.81
N Hayes	3798	36.53	36.23	-0.30	36.53	36.79	0.26	1322.64	1192.69	-129.95	1322.64	1433.33	110.69
N Hayes	3689	36.40	36.11	-0.29	36.40	36.66	0.26	1364.26	1231.48	-132.78	1364.26	1469.24	104.98
N Hayes	3370	36.16	35.87	-0.29	36.16	36.39	0.23	1365.63	1232.04	-133.59	1365.63	1451.51	85.88
N Hayes	2774	35.74	35.46	-0.28	35.74	35.95	0.21	1209.20	1100.10	-109.10	1209.20	1275.07	65.87
N Hayes	2090	35.17	34.91	-0.26	35.17	35.36	0.19	1254.21	1142.88	-111.33	1254.21	1346.32	92.11
N Hayes	1311	34.55	34.26	-0.29	34.55	34.75	0.20	1109.30	1071.09	-38.21	1109.30	1154.90	45.60
N Hayes	706	33.92	33.62	-0.30	33.92	34.13	0.21	1163.26	1100.38	-62.88	1163.26	1211.49	48.23
N Hayes	349	33.56	33.27	-0.29	33.56	33.77	0.21	1259.59	1165.53	-94.06	1259.59	1330.67	71.08

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River	River	Existing W S	CIP W.S.	Difference	Existing W S	ALT W S	Difference	Existing	CIP Q	Difference	Existing	Alt Q	Difference
River	Station	Elevation	Elevation	Difference	Elevation	Elevation	Difference	Q Total	Total	Difference	Q Total	Total	Difference
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
W Fork	51004	58.46	58.45	-0.01	58.46	58.50	0.04	113.37	114.10	0.73	113.37	126.84	13.47
W Fork	50013	58.33	58.31	-0.02	58.33	58.32	-0.01	288.67	292.01	3.34	288.67	338.08	49.41
W Fork	49293	58.24	58.22	-0.02	58.24	58.19	-0.05	343.46	348.96	5.50	343.46	420.86	77.40
W Fork	48383	58.13	58.10	-0.03	58.13	58.02	-0.11	377.50	384.64	7.14	377.50	467.42	89.92
W Fork	46928	58.02	57.99	-0.03	58.02	57.83	-0.19	214.56	227.08	12.52	214.56	347.52	132.96
W Fork	46759	58.02	57.98	-0.04	58.02	57.82	-0.20	190.49	206.89	16.40	190.49	341.00	150.51
W Fork	46225	58.02	57.98	-0.04	58.02	57.79	-0.23	38.60	64.54	25.94	38.60	249.89	211.29
W Fork	45659	58.02	57.98	-0.04	58.02	57.78	-0.24	-108.90	-76.43	32.47	-108.90	170.28	279.18
W Fork	45050	58.02	57.98	-0.04	58.02	57.78	-0.24	-234.86	-204.45	30.41	-234.86	104.42	339.28
W Fork	44689	58.03	57.99	-0.04	58.03	57.78	-0.25	-401.81	-375.10	26.71	-401.81	-25.65	376.16
W Fork	44447	58.02	57.98	-0.04	58.02	57.77	-0.25	-621.07	-607.60	13.47	-621.07	-220.23	400.84
W Fork	44363	58.02	57.98	-0.04	58.02	57.77	-0.25	-700.08	-688.85	11.23	-700.08	-263.94	436.14
W Fork	44263	58.24	58.19	-0.05	58.24	57.80	-0.44	-758.54	-754.77	3.77	-758.54	-292.42	466.12
W Fork	44147	58.21	58.16	-0.05	58.21	57.80	-0.41	-1050.78	-1041.88	8.90	-1050.78	-485.35	565.43
W Fork	43626	57.72	57.59	-0.13	57.72	57.36	-0.36	1695.24	1736.37	41.13	1695.24	2549.09	853.85
W Fork	43089	57.34	57.11	-0.23	57.34	56.98	-0.36	1250.06	1349.44	99.38	1250.06	2381.21	1131.15
W Fork	42405	57.03	56.72	-0.31	57.03	56.65	-0.38	998.24	1011.83	13.59	998.24	1768.97	770.73
W Fork	41481	56.75	56.59	-0.16	56.75	56.47	-0.28	815.29	309.20	-506.09	815.29	925.06	109.77
W Fork	40328	56.51	56.45	-0.06	56.51	56.37	-0.14	811.52	696.61	-114.91	811.52	887.53	76.01
W Fork	39472	56.47	56.40	-0.07	56.47	56.31	-0.16	269.75	364.09	94.34	269.75	907.81	638.06
W Fork	38398	56.29	56.23	-0.06	56.29	56.23	-0.06	739.14	697.35	-41.79	739.14	1207.79	468.65
W Fork	38222	56.28	56.22	-0.06	56.28	56.22	-0.06	624.88	587.42	-37.46	624.88	1106.37	481.49
W Fork	38170	56.26	56.20	-0.06	56.26	56.21	-0.05	583.14	548.84	-34.30	583.14	960.70	377.56
W Fork	38079	56.19	56.14	-0.05	56.19	55.98	-0.21	581.39	542.77	-38.62	581.39	948.54	367.15
W Fork	38058	56.18	56.13	-0.05	56.18	55.98	-0.20	585.78	545.47	-40.31	585.78	993.25	407.47
W Fork	37923	56.17	56.12	-0.05	56.17	55.97	-0.20	592.27	559.63	-32.64	592.27	1118.98	526.71
W Fork	37297	56.09	56.04	-0.05	56.09	55.90	-0.19	601.40	592.24	-9.16	601.40	1438.95	837.55
W Fork	36707	56.02	55.97	-0.05	56.02	55.84	-0.18	553.28	540.87	-12.41	553.28	1484.06	930.78
W Fork	36123	55.95	55.90	-0.05	55.95	55.78	-0.17	560.46	560.27	-0.19	560.46	1561.68	1001.22
W Fork	35439	55.84	55.79	-0.05	55.84	55.69	-0.15	654.99	663.60	8.61	654.99	1677.71	1022.72
W Fork	33855	55.76	55.70	-0.06	55.76	55.55	-0.21	134.42	180.44	46.02	134.42	1439.35	1304.93
W Fork	33191	55.43	55.38	-0.05	55.43	55.34	-0.09	1775.23	1754.28	-20.95	1775.23	3361.89	1586.66
W Fork	32646	55.08	55.02	-0.06	55.08	55.18	0.10	2005.33	1985.45	-19.88	2005.33	3459.84	1454.51
W Fork	32138	54.70	54.63	-0.07	54.70	54.88	0.18	2892.04	2872.01	-20.03	2892.04	3968.95	1076.91
W Fork	32096	54.69	54.63	-0.06	54.69	54.87	0.18	2931.41	2910.32	-21.09	2931.41	3990.48	1059.07
W Fork	31777	54.08	54.03	-0.05	54.08	53.74	-0.34	2928.55	2905.85	-22.70	2928.55	3981.79	1053.24

W Fork	31726	54.05	54.00	-0.05	54.05	53.74	-0.31	2948.86	2923.72	-25.14	2948.86	4100.86	1152.00
W Fork	31011	53.64	53.59	-0.05	53.64	53.37	-0.27	1838.67	1815.40	-23.27	1838.67	3402.30	1563.63
W Fork	30397	53.28	53.23	-0.05	53.28	52.96	-0.32	1202.54	1184.63	-17.91	1202.54	3415.29	2212.75
W Fork	29875	53.03	52.98	-0.05	53.03	52.69	-0.34	1201.02	1185.51	-15.51	1201.02	3291.58	2090.56
W Fork	29493	52.97	52.92	-0.05	52.97	52.55	-0.42	903.88	890.35	-13.53	903.88	3289.84	2385.96
W Fork	27829	52.05	52.01	-0.04	52.05	52.17	0.12	1361.14	1346.59	-14.55	1361.14	2971.25	1610.11
W Fork	27814	52.04	51.99	-0.05	52.04	52.16	0.12	1359.76	1345.25	-14.51	1359.76	2890.24	1530.48
W Fork	27717	51.96	51.92	-0.04	51.96	51.37	-0.59	1359.76	1345.24	-14.52	1359.76	2890.16	1530.40
W Fork	27700	51.96	51.91	-0.05	51.96	51.36	-0.60	1360.37	1345.77	-14.60	1360.37	2962.64	1602.27
W Fork	27474	51.75	51.70	-0.05	51.75	51.21	-0.54	1378.66	1375.57	-3.09	1378.66	2909.72	1531.06
W Fork	27110	51.57	51.53	-0.04	51.57	51.18	-0.39	1070.85	1063.07	-7.78	1070.85	1978.06	907.21
W Fork	27070	51.52	51.48	-0.04	51.52	51.18	-0.34	1040.72	1034.64	-6.08	1040.72	1839.49	798.77
W Fork	27053	51.48	51.43	-0.05	51.48	50.54	-0.94	1040.68	1034.63	-6.05	1040.68	1836.61	795.93
W Fork	27004	51.45	51.40	-0.05	51.45	50.52	-0.93	1086.50	1082.65	-3.85	1086.50	1825.98	739.48
W Fork	26409	51.18	51.13	-0.05	51.18	50.44	-0.74	1163.33	1153.21	-10.12	1163.33	1490.19	326.86
W Fork	25744	51.02	50.97	-0.05	51.02	50.38	-0.64	904.04	892.70	-11.34	904.04	1256.72	352.68
W Fork	24706	50.79	50.74	-0.05	50.79	50.27	-0.52	1093.38	1085.01	-8.37	1093.38	1499.57	406.19
W Fork	24589	50.73	50.68	-0.05	50.73	50.26	-0.47	1085.09	1078.47	-6.62	1085.09	1602.42	517.33
W Fork	24122	50.53	50.48	-0.05	50.53	50.18	-0.35	1182.49	1176.79	-5.70	1182.49	2122.27	939.78
W Fork	23947	50.44	50.38	-0.06	50.44	50.13	-0.31	1197.29	1189.22	-8.07	1197.29	2525.59	1328.30
W Fork	23604	50.33	50.27	-0.06	50.33	49.98	-0.35	1169.27	1165.11	-4.16	1169.27	2840.37	1671.10
W Fork	23518	50.25	50.19	-0.06	50.25	49.92	-0.33	1552.40	1531.53	-20.87	1552.40	3123.14	1570.74
W Fork	23373	50.13	50.08	-0.05	50.13	49.38	-0.75	1545.69	1525.06	-20.63	1545.69	3105.60	1559.91
W Fork	23306	50.09	50.04	-0.05	50.09	49.31	-0.78	1505.36	1484.06	-21.30	1505.36	3179.18	1673.82
W Fork	22672	49.52	49.46	-0.06	49.52	48.77	-0.75	1421.77	1412.62	-9.15	1421.77	3895.68	2473.91
W Fork	22162	49.21	49.15	-0.06	49.21	48.62	-0.59	1658.28	1664.19	5.91	1658.28	4064.04	2405.76
W Fork	21791	49.05	48.98	-0.07	49.05	48.50	-0.55	1428.88	1432.36	3.48	1428.88	4061.26	2632.38
W Fork	21283	48.90	48.83	-0.07	48.90	48.35	-0.55	1231.32	1222.07	-9.25	1231.32	4081.31	2849.99
W Fork	20513	48.49	48.40	-0.09	48.49	48.10	-0.39	1653.48	1671.55	18.07	1653.48	4223.43	2569.95
W Fork	19920	48.14	48.03	-0.11	48.14	47.93	-0.21	1603.19	1616.87	13.68	1603.19	4462.34	2859.15
W Fork	19519	48.02	47.89	-0.13	48.02	47.80	-0.22	1470.63	1485.74	15.11	1470.63	4425.92	2955.29
W Fork	19452	48.04	47.92	-0.12	48.04	47.81	-0.23	1340.98	1338.79	-2.19	1340.98	4406.45	3065.47
W Fork	19439	48.03	47.91	-0.12	48.03	47.80	-0.23	1277.99	1267.92	-10.07	1277.99	4385.14	3107.15
W Fork	19366	47.99	47.86	-0.13	47.99	47.78	-0.21	1278.45	1270.35	-8.10	1278.45	4358.37	3079.92
W Fork	18605	47.63	47.47	-0.16	47.63	47.59	-0.04	1192.89	1215.85	22.96	1192.89	3983.31	2790.42
W Fork	17779	47.30	47.05	-0.25	47.30	47.51	0.21	1259.38	1344.59	85.21	1259.38	2712.98	1453.60
W Fork	17721	47.27	47.02	-0.25	47.27	47.52	0.25	1232.45	1336.32	103.87	1232.45	2277.64	1045.19
W Fork	17656	47.10	46.81	-0.29	47.10	46.52	-0.58	1232.35	1335.70	103.35	1232.35	2270.08	1037.73
W Fork	17575	47.07	46.77	-0.30	47.07	46.49	-0.58	1304.93	1410.10	105.17	1304.93	2663.03	1358.10
W Fork	16646	46.76	46.34	-0.42	46.76	46.28	-0.48	1633.55	1791.49	157.94	1633.55	3591.16	1957.61
W Fork	15846	46.46	46.19	-0.27	46.46	46.18	-0.28	1593.45	994.17	-599.28	1593.45	3118.78	1525.33
W Fork	15394	46.25	46.03	-0.22	46.25	46.13	-0.12	1645.37	1306.72	-338.65	1645.37	3025.01	1379.64
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W Fork	14911	46.12	45.93	-0.19	46.12	46.11	-0.01	1420.94	1188.07	-232.87	1420.94	2394.87	973.93
W Fork	14440	45.97	45.82	-0.15	45.97	46.05	0.08	1503.58	1245.23	-258.35	1503.58	2046.01	542.43
W Fork	13933	45.73	45.57	-0.16	45.73	45.93	0.20	1937.35	1872.90	-64.45	1937.35	2301.66	364.31
W Fork	13771	45.65	45.49	-0.16	45.65	45.90	0.25	1950.28	1905.56	-44.72	1950.28	2186.39	236.11
W Fork	13736	45.62	45.46	-0.16	45.62	45.90	0.28	1955.51	1907.67	-47.84	1955.51	2170.39	214.88
W Fork	13713	45.57	45.40	-0.17	45.57	45.81	0.24	1955.32	1906.97	-48.35	1955.32	2169.60	214.28
W Fork	13680	45.56	45.40	-0.16	45.56	45.81	0.25	2003.91	1921.14	-82.77	2003.91	2216.07	212.16
W Fork	13220	45.25	45.15	-0.10	45.25	45.65	0.40	2388.65	2146.13	-242.52	2388.65	2808.13	419.48
W Fork	12944	45.12	45.05	-0.07	45.12	45.54	0.42	2346.44	2079.55	-266.89	2346.44	2635.75	289.31
W Fork	12854	45.08	45.00	-0.08	45.08	45.54	0.46	2171.34	1980.59	-190.75	2171.34	2351.76	180.42
W Fork	12769	44.79	44.75	-0.04	44.79	45.18	0.39	2170.15	1979.33	-190.82	2170.15	2351.26	181.11
W Fork	12703	44.63	44.62	-0.01	44.63	44.99	0.36	2207.54	2007.69	-199.85	2207.54	2433.28	225.74
W Fork	12244	44.42	44.39	-0.03	44.42	44.80	0.38	1631.35	1617.68	-13.67	1631.35	1715.64	84.29
W Fork	11115	43.45	43.42	-0.03	43.45	43.73	0.28	1825.62	1824.45	-1.17	1825.62	1960.78	135.16
W Fork	11040	43.44	43.41	-0.03	43.44	43.71	0.27	1997.78	1996.42	-1.36	1997.78	2181.45	183.67
W Fork	10968	43.42	43.38	-0.04	43.42	43.69	0.27	2132.25	2143.33	11.08	2132.25	2310.58	178.33
W Fork	10945	43.39	43.35	-0.04	43.39	43.66	0.27	2151.70	2165.79	14.09	2151.70	2332.04	180.34
W Fork	9364	42.69	42.63	-0.06	42.69	42.93	0.24	1507.94	1506.57	-1.37	1507.94	1716.63	208.69
W Fork	8384	42.12	42.03	-0.09	42.12	42.42	0.30	1880.60	1907.39	26.79	1880.60	1999.21	118.61
W Fork	8352	42.13	42.06	-0.07	42.13	42.47	0.34	1760.69	1686.99	-73.70	1760.69	1743.62	-17.07
W Fork	8320	41.92	41.85	-0.07	41.92	42.28	0.36	850.16	1670.73	820.57	850.16	1237.60	387.44
W Fork	8282	41.82	41.78	-0.04	41.82	42.12	0.30	2066.79	1967.68	-99.11	2066.79	2234.63	167.84
W Fork	7427	41.33	41.29	-0.04	41.33	41.60	0.27	1626.99	1611.50	-15.49	1626.99	1800.42	173.43
W Fork	6777	40.97	40.93	-0.04	40.97	41.24	0.27	1725.32	1707.12	-18.20	1725.32	1824.15	98.83
W Fork	6131	40.61	40.57	-0.04	40.61	40.93	0.32	1838.80	1823.08	-15.72	1838.80	1817.37	-21.43
W Fork	5494	40.21	40.17	-0.04	40.21	40.52	0.31	1961.75	1943.21	-18.54	1961.75	2099.14	137.39
W Fork	5087	39.98	39.94	-0.04	39.98	40.23	0.25	1836.25	1819.28	-16.97	1836.25	2121.72	285.47
W Fork	4024	39.44	39.41	-0.03	39.44	39.68	0.24	1533.94	1519.14	-14.80	1533.94	1654.65	120.71
W Fork	2968	38.78	38.74	-0.04	38.78	39.01	0.23	1793.15	1779.12	-14.03	1793.15	1885.53	92.38
W Fork	2449	38.46	38.42	-0.04	38.46	38.69	0.23	1875.84	1861.80	-14.04	1875.84	1966.78	90.94
W Fork	1392	38.14	38.10	-0.04	38.14	38.36	0.22	1362.15	1358.16	-3.99	1362.15	1425.67	63.52
W Fork	165	37.92	37.89	-0.03	37.92	38.14	0.22	1228.66	1220.11	-8.55	1228.66	1280.95	52.29
S Hayes	37203	54.46	54.46	0.00	54.46	54.45	-0.01	155.29	155.27	-0.02	155.29	155.17	-0.12
S Hayes	36329	54.18	54.18	0.00	54.18	54.18	0.00	305.27	305.27	0.00	305.27	302.12	-3.15
S Hayes	34868	53.52	53.52	0.00	53.52	53.42	-0.10	390.84	390.84	0.00	390.84	418.22	27.38
S Hayes	34779	53.50	53.50	0.00	53.50	53.40	-0.10	399.09	399.10	0.01	399.09	428.52	29.43
S Hayes	34618	53.21	53.21	0.00	53.21	53.07	-0.14	398.86	398.86	0.00	398.86	426.64	27.78
S Hayes	34512	53.14	53.14	0.00	53.14	52.97	-0.17	359.75	359.75	0.00	359.75	441.13	81.38
S Hayes	34331	53.00	53.00	0.00	53.00	52.84	-0.16	400.58	400.59	0.01	400.58	457.51	56.93
S Hayes	33541	52.61	52.61	0.00	52.61	52.42	-0.19	349.89	349.89	0.00	349.89	398.29	48.40

S Hayes	32687	52.21	52.21	0.00	52.21	52.08	-0.13	405.57	405.48	-0.09	405.57	444.57	39.00
S Hayes	32190	52.06	52.06	0.00	52.06	51.97	-0.09	332.31	332.45	0.14	332.31	429.37	97.06
S Hayes	32114	52.05	52.05	0.00	52.05	51.96	-0.09	346.65	346.80	0.15	346.65	380.70	34.05
S Hayes	31903	51.87	51.87	0.00	51.87	51.67	-0.20	346.45	346.61	0.16	346.45	379.83	33.38
S Hayes	31806	51.82	51.82	0.00	51.82	51.64	-0.18	375.27	375.40	0.13	375.27	476.68	101.41
S Hayes	31054	51.63	51.63	0.00	51.63	51.47	-0.16	354.88	355.05	0.17	354.88	440.23	85.35
S Hayes	30342	51.47	51.47	0.00	51.47	51.29	-0.18	406.00	406.01	0.01	406.00	497.29	91.29
S Hayes	30248	51.47	51.47	0.00	51.47	51.29	-0.18	369.57	369.55	-0.02	369.57	404.49	34.92
S Hayes	30101	51.33	51.33	0.00	51.33	51.05	-0.28	369.14	369.15	0.01	369.14	399.26	30.12
S Hayes	30007	51.30	51.30	0.00	51.30	51.02	-0.28	384.91	384.94	0.03	384.91	491.84	106.93
S Hayes	29429	51.21	51.21	0.00	51.21	50.94	-0.27	364.14	364.24	0.10	364.14	394.84	30.70
S Hayes	29291	51.19	51.19	0.00	51.19	50.92	-0.27	347.41	347.39	-0.02	347.41	305.52	-41.89
S Hayes	29262	51.19	51.19	0.00	51.19	50.92	-0.27	338.42	338.52	0.10	338.42	282.16	-56.26
S Hayes	29140	51.05	51.05	0.00	51.05	50.80	-0.25	327.58	327.33	-0.25	327.58	279.04	-48.54
S Hayes	29063	51.05	51.05	0.00	51.05	50.79	-0.26	301.21	301.04	-0.17	301.21	300.27	-0.94
S Hayes	28680	51.02	51.02	0.00	51.02	50.73	-0.29	229.87	229.93	0.06	229.87	353.64	123.77
S Hayes	28085	51.00	51.00	0.00	51.00	50.67	-0.33	76.75	76.78	0.03	76.75	292.80	216.05
S Hayes	27494	51.00	51.00	0.00	51.00	50.63	-0.37	118.10	118.09	-0.01	118.10	303.52	185.42
S Hayes	27067	50.82	50.82	0.00	50.82	50.52	-0.30	762.27	761.99	-0.28	762.27	816.98	54.71
S Hayes	26377	50.59	50.59	0.00	50.59	50.37	-0.22	598.82	598.93	0.11	598.82	622.07	23.25
S Hayes	25799	50.49	50.49	0.00	50.49	50.26	-0.23	433.78	433.77	-0.01	433.78	722.84	289.06
S Hayes	24663	50.20	50.20	0.00	50.20	50.04	-0.16	725.23	725.60	0.37	725.23	846.09	120.86
S Hayes	24358	49.71	49.71	0.00	49.71	49.64	-0.07	1280.61	1281.39	0.78	1280.61	1559.13	278.52
S Hayes	24279	49.62	49.62	0.00	49.62	49.42	-0.20	1350.17	1350.84	0.67	1350.17	1997.28	647.11
S Hayes	23735	49.20	49.20	0.00	49.20	48.47	-0.73	1349.65	1349.96	0.31	1349.65	1996.18	646.53
S Hayes	23636	48.89	48.89	0.00	48.89	48.30	-0.59	1563.29	1563.30	0.01	1563.29	2445.40	882.11
S Hayes	23016	48.50	48.49	-0.01	48.50	47.94	-0.56	909.11	909.66	0.55	909.11	2095.19	1186.08
S Hayes	22457	48.21	48.21	0.00	48.21	47.57	-0.64	807.77	808.98	1.21	807.77	2126.11	1318.34
S Hayes	22221	48.08	48.08	0.00	48.08	47.44	-0.64	849.66	851.12	1.46	849.66	2159.91	1310.25
S Hayes	21326	47.70	47.69	-0.01	47.70	46.97	-0.73	737.68	738.87	1.19	737.68	2208.41	1470.73
S Hayes	20923	47.37	47.36	-0.01	47.37	46.78	-0.59	913.55	917.29	3.74	913.55	2130.05	1216.50
S Hayes	20417	46.96	46.94	-0.02	46.96	46.46	-0.50	957.66	961.76	4.10	957.66	2072.75	1115.09
S Hayes	19676	46.45	46.42	-0.03	46.45	45.95	-0.50	916.11	920.10	3.99	916.11	1911.11	995.00
S Hayes	19089	46.17	46.13	-0.04	46.17	45.52	-0.65	925.47	924.97	-0.50	925.47	1963.30	1037.83
S Hayes	18667	45.98	45.94	-0.04	45.98	45.25	-0.73	847.15	837.91	-9.24	847.15	1894.34	1047.19
S Hayes	18131	45.76	45.61	-0.15	45.76	44.85	-0.91	744.07	906.76	162.69	744.07	1918.72	1174.65
S Hayes	18011	45.76	45.53	-0.23	45.76	44.85	-0.91	643.45	958.39	314.94	643.45	1608.52	965.07
S Hayes	17882	45.60	45.16	-0.44	45.60	44.11	-1.49	621.03	912.53	291.50	621.03	1536.47	915.44
S Hayes	17819	45.30	44.68	-0.62	45.30	43.73	-1.57	1438.82	1710.74	271.92	1438.82	2345.35	906.53
S Hayes	17625	45.03	44.56	-0.47	45.03	43.55	-1.48	1377.18	1226.70	-150.48	1377.18	2169.95	792.77
S Hayes	16929	44.43	44.29	-0.14	44.43	43.21	-1.22	983.69	381.58	-602.11	983.69	1417.91	434.22

S Hayes	16252	43.98	44.22	0.24	43.98	43.13	-0.85	842.24	357.33	-484.91	842.24	834.37	-7.87
S Hayes	15710	43.66	44.05	0.39	43.66	43.11	-0.55	794.78	669.05	-125.73	794.78	659.09	-135.69
S Hayes	15029	43.33	43.50	0.17	43.33	43.08	-0.25	794.11	1123.29	329.18	794.11	682.35	-111.76
S Hayes	14384	43.03	43.07	0.04	43.03	43.03	0.00	776.60	919.33	142.73	776.60	740.41	-36.19
S Hayes	14005	42.84	42.87	0.03	42.84	42.92	0.08	737.85	791.70	53.85	737.85	833.77	95.92
S Hayes	13292	42.41	42.40	-0.01	42.41	42.53	0.12	766.36	785.31	18.95	766.36	842.03	75.67
S Hayes	12382	41.92	41.91	-0.01	41.92	42.02	0.10	747.70	744.65	-3.05	747.70	773.28	25.58
S Hayes	11488	41.39	41.38	-0.01	41.39	41.51	0.12	673.71	666.72	-6.99	673.71	677.08	3.37
S Hayes	10519	40.42	40.40	-0.02	40.42	40.49	0.07	725.14	727.93	2.79	725.14	704.19	-20.95
S Hayes	10267	40.18	40.16	-0.02	40.18	40.24	0.06	724.62	727.12	2.50	724.62	703.90	-20.72
S Hayes	9653	39.76	39.74	-0.02	39.76	39.82	0.06	743.22	740.43	-2.79	743.22	744.53	1.31
S Hayes	9246	39.45	39.43	-0.02	39.45	39.52	0.07	740.04	736.12	-3.92	740.04	743.50	3.46
S Hayes	8443	38.91	38.88	-0.03	38.91	38.98	0.07	662.65	660.36	-2.29	662.65	662.60	-0.05
S Hayes	7748	38.70	38.66	-0.04	38.70	38.77	0.07	395.80	404.17	8.37	395.80	382.89	-12.91
S Hayes	6801	38.04	37.99	-0.05	38.04	38.16	0.12	587.92	584.67	-3.25	587.92	569.50	-18.42
S Hayes	6039	37.40	37.33	-0.07	37.40	37.59	0.19	655.41	647.85	-7.56	655.41	632.63	-22.78
S Hayes	5587	36.96	36.90	-0.06	36.96	37.16	0.20	746.97	738.35	-8.62	746.97	707.97	-39.00
S Hayes	4889	36.28	36.20	-0.08	36.28	36.40	0.12	703.48	695.10	-8.38	703.48	643.37	-60.11
S Hayes	4426	35.85	35.77	-0.08	35.85	35.92	0.07	829.54	812.48	-17.06	829.54	811.30	-18.24
S Hayes	3865	35.39	35.30	-0.09	35.39	35.46	0.07	891.79	879.00	-12.79	891.79	900.83	9.04
S Hayes	3683	35.33	35.24	-0.09	35.33	35.41	0.08	926.92	916.02	-10.90	926.92	930.30	3.38
S Hayes	3538	35.11	35.03	-0.08	35.11	35.19	0.08	925.60	914.11	-11.49	925.60	928.67	3.07
S Hayes	3380	34.98	34.90	-0.08	34.98	35.06	0.08	911.77	901.16	-10.61	911.77	909.24	-2.53
S Hayes	2974	34.72	34.62	-0.10	34.72	34.80	0.08	716.77	716.01	-0.76	716.77	696.19	-20.58
S Hayes	2913	34.72	34.61	-0.11	34.72	34.80	0.08	672.24	674.22	1.98	672.24	653.33	-18.91
S Hayes	2835	34.28	34.18	-0.10	34.28	34.39	0.11	668.41	667.10	-1.31	668.41	649.97	-18.44
S Hayes	2769	34.23	34.13	-0.10	34.23	34.34	0.11	664.68	664.35	-0.33	664.68	645.19	-19.49
S Hayes	2619	34.15	34.03	-0.12	34.15	34.26	0.11	651.24	650.43	-0.81	651.24	633.20	-18.04
S Hayes	2137	33.91	33.78	-0.13	33.91	34.04	0.13	555.27	554.46	-0.81	555.27	548.85	-6.42
S Hayes	1905	33.82	33.69	-0.13	33.82	33.96	0.14	626.06	609.50	-16.56	626.06	638.65	12.59
S Hayes	1622	33.73	33.59	-0.14	33.73	33.87	0.14	644.67	626.97	-17.70	644.67	657.21	12.54
S Hayes	1185	33.62	33.48	-0.14	33.62	33.77	0.15	640.50	627.57	-12.93	640.50	642.11	1.61
S Hayes	707	33.60	33.46	-0.14	33.60	33.75	0.15	404.57	394.52	-10.05	404.57	397.81	-6.76
S Hayes	284	33.57	33.43	-0.14	33.57	33.72	0.15	417.51	405.82	-11.69	417.51	430.13	12.62
N Hayes	30961	51.15	51.15	0.00	51.15	51.03	-0.12	367.18	367.15	-0.03	367.18	369.03	1.85
N Hayes	30742	51.02	51.02	0.00	51.02	50.87	-0.15	284.48	284.59	0.11	284.48	299.27	14.79
N Hayes	30356	50.92	50.92	0.00	50.92	50.70	-0.22	256.49	256.64	0.15	256.49	324.15	67.66
N Hayes	30123	50.88	50.88	0.00	50.88	50.62	-0.26	220.68	220.75	0.07	220.68	263.41	42.73
N Hayes	29703	50.81	50.81	0.00	50.81	50.50	-0.31	213.88	213.95	0.07	213.88	246.24	32.36
N Hayes	29123	50.73	50.73	0.00	50.73	50.32	-0.41	234.45	234.53	0.08	234.45	288.55	54.10
N Hayes	28748	50.68	50.68	0.00	50.68	50.22	-0.46	259.46	259.61	0.15	259.46	327.51	68.05

N Hayes	28652	50.67	50.67	0.00	50.67	50.19	-0.48	258.40	258.53	0.13	258.40	323.34	64.94
N Hayes	28558	50.64	50.64	0.00	50.64	50.12	-0.52	258.38	258.51	0.13	258.38	322.43	64.05
N Hayes	28513	50.63	50.63	0.00	50.63	50.10	-0.53	264.23	264.38	0.15	264.23	336.75	72.52
N Hayes	28169	50.58	50.58	0.00	50.58	49.95	-0.63	302.93	303.12	0.19	302.93	424.01	121.08
N Hayes	27721	50.48	50.48	0.00	50.48	49.55	-0.93	373.02	373.21	0.19	373.02	577.85	204.83
N Hayes	27362	50.32	50.32	0.00	50.32	48.94	-1.38	619.42	619.60	0.18	619.42	806.82	187.40
N Hayes	27197	50.24	50.23	-0.01	50.24	48.61	-1.63	907.16	907.37	0.21	907.16	1051.27	144.11
N Hayes	26405	50.07	50.07	0.00	50.07	48.50	-1.57	907.15	907.38	0.23	907.15	1047.17	140.02
N Hayes	26348	49.97	49.97	0.00	49.97	48.51	-1.46	838.57	838.88	0.31	838.57	995.39	156.82
N Hayes	25970	49.48	49.48	0.00	49.48	48.35	-1.13	719.69	720.60	0.91	719.69	1011.54	291.85
N Hayes	25468	49.11	49.10	-0.01	49.11	48.13	-0.98	524.94	526.77	1.83	524.94	976.18	451.24
N Hayes	25135	48.93	48.93	0.00	48.93	48.00	-0.93	493.69	495.69	2.00	493.69	965.61	471.92
N Hayes	24504	48.56	48.54	-0.02	48.56	47.78	-0.78	506.90	511.45	4.55	506.90	989.69	482.79
N Hayes	23880	48.14	48.11	-0.03	48.14	47.56	-0.58	413.28	420.89	7.61	413.28	1005.66	592.38
N Hayes	23475	47.89	47.84	-0.05	47.89	47.45	-0.44	416.27	425.16	8.89	416.27	1019.47	603.20
N Hayes	23175	47.72	47.65	-0.07	47.72	47.38	-0.34	423.96	432.83	8.87	423.96	985.61	561.65
N Hayes	22938	47.59	47.50	-0.09	47.59	47.34	-0.25	405.64	430.07	24.43	405.64	887.04	481.40
N Hayes	22883	47.58	47.49	-0.09	47.58	47.35	-0.23	401.42	433.25	31.83	401.42	776.53	375.11
N Hayes	22839	47.59	47.49	-0.10	47.59	47.35	-0.24	375.87	424.19	48.32	375.87	672.58	296.71
N Hayes	22732	47.30	47.11	-0.19	47.30	46.53	-0.77	375.42	423.45	48.03	375.42	661.91	286.49
N Hayes	22663	47.26	47.06	-0.20	47.26	46.49	-0.77	406.02	449.17	43.15	406.02	862.56	456.54
N Hayes	22356	47.14	46.90	-0.24	47.14	46.39	-0.75	466.48	491.20	24.72	466.48	996.42	529.94
N Hayes	21810	46.91	46.78	-0.13	46.91	46.27	-0.64	527.62	246.81	-280.81	527.62	892.85	365.23
N Hayes	21491	46.77	46.77	0.00	46.77	46.24	-0.53	572.42	170.32	-402.10	572.42	761.88	189.46
N Hayes	20586	46.46	46.66	0.20	46.46	46.15	-0.31	546.93	417.54	-129.39	546.93	844.42	297.49
N Hayes	20278	46.37	46.45	0.08	46.37	46.12	-0.25	507.85	765.26	257.41	507.85	870.23	362.38
N Hayes	20159	46.37	46.46	0.09	46.37	46.12	-0.25	492.57	632.64	140.07	492.57	732.12	239.55
N Hayes	19934	46.24	46.26	0.02	46.24	45.88	-0.36	492.51	632.02	139.51	492.51	730.74	238.23
N Hayes	19841	46.20	46.21	0.01	46.20	45.87	-0.33	605.12	687.29	82.17	605.12	932.52	327.40
N Hayes	19659	46.16	46.17	0.01	46.16	45.85	-0.31	625.83	672.45	46.62	625.83	998.75	372.92
N Hayes	19505	46.11	46.12	0.01	46.11	45.83	-0.28	616.53	648.69	32.16	616.53	1013.93	397.40
N Hayes	19394	46.11	46.12	0.01	46.11	45.84	-0.27	561.50	579.79	18.29	561.50	803.71	242.21
N Hayes	19263	45.85	45.84	-0.01	45.85	44.88	-0.97	561.07	579.03	17.96	561.07	803.70	242.63
N Hayes	19172	45.79	45.78	-0.01	45.79	44.85	-0.94	667.00	681.64	14.64	667.00	905.39	238.39
N Hayes	18658	45.45	45.44	-0.01	45.45	44.73	-0.72	744.32	749.89	5.57	744.32	1140.30	395.98
N Hayes	18218	45.16	45.13	-0.03	45.16	44.66	-0.50	666.34	674.27	7.93	666.34	1122.53	456.19
N Hayes	17823	44.98	44.95	-0.03	44.98	44.62	-0.36	601.58	610.83	9.25	601.58	866.87	265.29
N Hayes	17784	44.93	44.88	-0.05	44.93	44.62	-0.31	599.52	608.79	9.27	599.52	805.31	205.79
N Hayes	17725	44.87	44.83	-0.04	44.87	44.07	-0.80	599.29	608.32	9.03	599.29	805.30	206.01
N Hayes	17684	44.84	44.79	-0.05	44.84	44.06	-0.78	622.08	631.36	9.28	622.08	850.00	227.92
N Hayes	16695	44.37	44.30	-0.07	44.37	43.70	-0.67	614.28	623.18	8.90	614.28	1153.66	539.38

N Hayes	16144	44.10	44.03	-0.07	44.10	43.58	-0.52	605.82	590.05	-15.77	605.82	859.81	253.99
N Hayes	15295	43.82	43.78	-0.04	43.82	43.50	-0.32	456.28	385.86	-70.42	456.28	507.59	51.31
N Hayes	14581	43.63	43.63	0.00	43.63	43.47	-0.16	517.09	465.38	-51.71	517.09	440.10	-76.99
N Hayes	14073	43.45	43.47	0.02	43.45	43.36	-0.09	612.28	588.22	-24.06	612.28	538.11	-74.17
N Hayes	13846	43.34	43.32	-0.02	43.34	43.27	-0.07	646.84	700.59	53.75	646.84	600.07	-46.77
N Hayes	13776	43.29	43.27	-0.02	43.29	43.25	-0.04	645.03	693.50	48.47	645.03	581.09	-63.94
N Hayes	13476	42.99	42.92	-0.07	42.99	42.99	0.00	644.98	693.45	48.47	644.98	580.02	-64.96
N Hayes	12804	42.64	42.56	-0.08	42.64	42.68	0.04	783.40	780.31	-3.09	783.40	747.83	-35.57
N Hayes	12148	42.39	42.30	-0.09	42.39	42.45	0.06	737.70	722.14	-15.56	737.70	720.38	-17.32
N Hayes	11610	42.12	42.04	-0.08	42.12	42.19	0.07	886.89	864.25	-22.64	886.89	890.47	3.58
N Hayes	11065	41.74	41.66	-0.08	41.74	41.81	0.07	948.30	924.10	-24.20	948.30	967.98	19.68
N Hayes	10229	41.29	41.21	-0.08	41.29	41.35	0.06	919.11	898.52	-20.59	919.11	985.84	66.73
N Hayes	9624	40.85	40.77	-0.08	40.85	40.97	0.12	1203.67	1178.28	-25.39	1203.67	1135.79	-67.88
N Hayes	9030	40.45	40.37	-0.08	40.45	40.59	0.14	1194.32	1170.08	-24.24	1194.32	1203.66	9.34
N Hayes	8148	39.77	39.69	-0.08	39.77	39.91	0.14	1273.28	1247.10	-26.18	1273.28	1313.84	40.56
N Hayes	7969	39.58	39.50	-0.08	39.58	39.71	0.13	1363.96	1334.04	-29.92	1363.96	1409.98	46.02
N Hayes	7937	39.62	39.55	-0.07	39.62	39.76	0.14	1324.21	1295.38	-28.83	1324.21	1366.49	42.28
N Hayes	7824	39.51	39.43	-0.08	39.51	39.64	0.13	1323.86	1294.50	-29.36	1323.86	1366.35	42.49
N Hayes	7749	39.48	39.41	-0.07	39.48	39.61	0.13	1282.26	1253.67	-28.59	1282.26	1325.22	42.96
N Hayes	7678	39.35	39.28	-0.07	39.35	39.48	0.13	1294.51	1264.41	-30.10	1294.51	1341.80	47.29
N Hayes	7607	39.30	39.23	-0.07	39.30	39.43	0.13	1302.68	1272.26	-30.42	1302.68	1351.89	49.21
N Hayes	7510	39.25	39.18	-0.07	39.25	39.39	0.14	1290.54	1260.32	-30.22	1290.54	1340.54	50.00
N Hayes	7159	39.05	38.98	-0.07	39.05	39.19	0.14	1189.61	1163.06	-26.55	1189.61	1232.78	43.17
N Hayes	6711	38.82	38.75	-0.07	38.82	38.95	0.13	1048.70	1024.46	-24.24	1048.70	1086.41	37.71
N Hayes	6045	38.58	38.51	-0.07	38.58	38.71	0.13	944.22	935.76	-8.46	944.22	969.48	25.26
N Hayes	5377	38.18	38.11	-0.07	38.18	38.31	0.13	1373.22	1343.43	-29.79	1373.22	1415.84	42.62
N Hayes	4771	37.93	37.87	-0.06	37.93	38.06	0.13	1661.29	1622.93	-38.36	1661.29	1723.22	61.93
N Hayes	3997	37.61	37.54	-0.07	37.61	37.73	0.12	1759.16	1726.54	-32.62	1759.16	1808.42	49.26
N Hayes	3899	37.62	37.55	-0.07	37.62	37.74	0.12	1818.50	1784.44	-34.06	1818.50	1869.51	51.01
N Hayes	3798	37.50	37.43	-0.07	37.50	37.62	0.12	1818.28	1784.08	-34.20	1818.28	1869.33	51.05
N Hayes	3689	37.34	37.28	-0.06	37.34	37.47	0.13	1870.17	1835.33	-34.84	1870.17	1912.64	42.47
N Hayes	3370	37.07	37.01	-0.06	37.07	37.18	0.11	1866.77	1832.90	-33.87	1866.77	1887.23	20.46
N Hayes	2774	36.62	36.56	-0.06	36.62	36.72	0.10	1592.71	1564.87	-27.84	1592.71	1611.74	19.03
N Hayes	2090	36.00	35.94	-0.06	36.00	36.09	0.09	1660.79	1634.92	-25.87	1660.79	1700.07	39.28
N Hayes	1311	35.47	35.40	-0.07	35.47	35.55	0.08	1309.26	1295.62	-13.64	1309.26	1334.32	25.06
N Hayes	706	34.93	34.84	-0.09	34.93	35.00	0.07	1372.27	1369.89	-2.38	1372.27	1402.71	30.44
N Hayes	349	34.56	34.47	-0.09	34.56	34.63	0.07	1591.53	1581.63	-9.90	1591.53	1617.58	26.05





# **Appendix C - Detailed Cost Estimate Calculations**

# C.1 Right-of-Way acquisition cost

The right-of-way (ROW) cost were calculated by taking the average price per acre of the properties in the immediate vicinity to the site. The average price per acre was then multiplied by the pond's area to find the estimated land cost. The values were multiplied by a factor of 3 to account for any out-of-date Appraisal District information, change in market values, and closing and transaction costs. This process was done to find both the channel and pond ROW acquisition costs. Results for both calculations are in **Tables C-1**, and **C-2**.

rubie C 1. Cupitur Improvemento 1 un (CII / ICO V COst Estimate									
Name	Area (ac)	ROW Cost							
West Fork Pond 1	130.67	\$0.6M							
West Fork Pond 3 &4	192.10	\$0.6M							
West Fork Pond 5	78.31	\$4.0M							
North Hayes Pond 1& 2	59.79	\$0.9M							
North Hayes Pond 3	48.92	\$2.0M							
South Hayes Pond 1 & 2	465.15	\$0.8M							
Pond ROW	/ Multiplier (3x) *	\$13.6M							
	Total=	\$40.8M							

 Table C-1.
 Capital Improvements Plan (CIP) ROW Cost Estimate

\* Multiplier is to increase price per sq. ft. accuracy.

 Table C-2.
 Alternative (Alt) ROW Cost Estimate

Name	Area (ac)	ROW Cost				
West Fork Pond 1	130.67	\$0.6M				
West Fork Pond 2	120.46	\$0.6M				
West Fork Pond 3&4	192.10	\$4.0M				
West Fork Pond 5	78.31	\$0.9M				
North Hayes Pond 1& 2	59.79	\$2.0M				
North Hayes Pond 3	48.92	\$0.8M				
South Hayes Pond 1 & 2	465.15	\$4.6M				
West Fork Channel	409	\$3.1M				
North Hayes Channel	282	\$2.9M				
South Hayes Channel	242	\$1.5M				
ROW Mu	ROW Multiplier (3x) *					
]	Total=	\$63.0M				

\* Multiplier is to increase price per sq. ft. accuracy.

# C.2 Pond excavation volume

Excavation costs were obtained using the information provided in the calculator seen in **Table C-3**. The pond cut volumes were estimated using the high bank, pond toe areas, and depth. The depth of the pond is determined based on the depth of the channel such that the invert of the outfall pipe is 1-ft above the channel flowline. A 30-foot maintenance berm surrounds the pond. Auto CAD Civil 3D was used to create preliminary surfaces of the ponds to determine the stage-storage relationship.



Figure C-1. Typical Pond Profile for Excavation Calculations

Dend	Estimated Cut Volume							
Pond	CF	AC-FT	СҮ					
West Fork Pond1	22943045	527	849742					
West Fork Pond 2	30134520	692	1116093					
West Fork Pond 3	9484835	218	351290.1852					
West Fork Pond 4	15830727	363	586323.2222					
West Fork Pond 5	8681623	199	321541.5926					
North Hayes Pond 1	4475549	103	165761.0741					
North Hayes Pond 2	5404566	124	200169.1111					
North Hayes Pond 3	6931965	159	256739.4444					
South Hayes Pond 1	42143880	967	1560884.444					
South Hayes Pond 2	44024395	1011	1630533.148					

# C.3 Channel excavation volume

Channel excavation considered the channel improvement length, existing width, the total desired width, and average depth. Using the HEC-RAS Channel Design/Modification Editor, the volume of channel that needs to be excavated was found by multiplying the length of the channel (ft) by the area of the cut (ft<sup>2</sup>) for each section of channel with a specific width. These calculations can be seen in table C-5. Finally, all the volumes for the different channel sections were added up to find the total volume for each channel. These calculations are provided in table C-6.



Figure C-2. **Typical Channel Excavation** 

Table C-4.	Example Channel Excavation Volume Calculation
------------	-----------------------------------------------

Channel	Input		Calculations			
Channel	Length (ft)	Cut Area (ft <sup>2</sup> )	CF	AC-FT	CY	
North Hayes (Section 1)	57.2	75.9	4341.48	0.09967	160.80	

Channel	Calculations									
Channel	CF	AC-FT	СҮ							
North Hayes	3089171.78	70.92	114413.77							
South Hayes	2268338.45	52.07	84012.54							
West Fork	8899781.52	204.31	329621.54							

#### **C.4 Excavation cost**

To find the costs, the volumes are multiplied by the price per cubic yard to find the dig costs and are added with the prices of erosion control (10% of subtotal), mobilization (5% of subtotal), and utility adjustments (25% of subtotal where applicable).

Table C-6. Pond Exca	ivation Cost Estima	ite
Dand	C	ost
Pond	CIP	Alt
West Fork Pond 1	\$4.9M	\$4.9M
West Fork Pond 2	-	\$6.4M
West Fork Pond 3	\$2.5M	\$2.5M
West Fork Pond 4	\$4.2M	\$4.2M
West Fork Pond 5	\$2.3M	\$2.3M
North Hayes Pond 1	\$1.0M	\$1.0M
North Hayes Pond 2	\$1.2M	\$1.2M

at Eat

\$1.8M	\$1.8M
\$11.2M	\$11.2M
\$9.4M	\$9.4M
\$17.9M	\$24.3M
	\$1.8M \$11.2M \$9.4M <b>\$17.9M</b>

\*Includes excavation and haul-off and utility adjustments

### Table C-7.Channel Excavation Cost

Channel	Length of Improvements (ft)	Excavation Volume (CY)	\$/CY	Cost
West Fork of Chocolate Bayou	329621.54	114413.77	\$12.00	\$3,955,458.45
North Hayes Creek	114413.77	840012.54	\$12.00	\$1,372,965.24
South Hayes Creek	84012.54	329621.54	\$12.00	\$1,008,150.42
			Subtotal =	\$6,336,574.11
			Erosion Control =	633,657.41
		Mobilization =	\$316,828.71	
* Erosion control (10% of subtot adjustments (25% of subtotal)	al), mobilization (5% of sub	total), and utility	Utility Adjustment =	\$1,584,143.53

Miscellaneous =

Total =

\$316,828.71

\$9,188,032.47

# C.5 Total cost estimates

Finally, the total ROW and excavation costs are added with a 25% contingency cost to consider any issues that may arise. Along with the other added cost, the contingency multiplier is added to the total cost for each alternative. The total costs of each alternative are below in **Tables C-9**.

 Table C-8.
 Summary of Total Project Cost

Scenario	Pond ROW	Channel ROW	Pond Excavation	Channel Excavation	25% Contingency	Total Cost	Total Cost (including additional volume)
CIP	\$39.1M	\$0.0M	\$38.4M	\$0.0M	\$19.4M	\$96.9M	n/a
Alt	\$40.8M	\$22.5M	\$44.9M	\$9.1M	\$29.3M	\$146.6M	\$221.4 M

# **Appendix D – Ultimate Channel R.O.W. Determination**

The determination of the ultimate channel right-of-way needs was prepared using the Manning's Equation based on normal depth solution. The peak flows are based on existing development conditions assuming that all future development will provide sufficient storm water detention volume to mitigate for the anticipated increase in stormwater runoff associated with the development.

# **D.1 Peak flows**

The peak flows used to determine the ultimate channel right-of-way needs is based on the HEC-HMS computer simulation of the existing conditions for the 1% ACE stormwater runoff. The stormwater runoff hydrographs from the sub-basins are combined at specific locations along each stream resulting in the peak flows for consideration. No routing of the hydrographs is performed for this exercise. This approach is assumed to provide conservative flows in consideration of determining the appropriate channel capacity needs.

# D.2 Ultimate Channel drainage Right-of-Way widths

The ultimate width for the channels assumes that the lowest 1.0 foot of the channel would remain undisturbed. This approach is identified as being necessary to ensure that stream impacts would not result from a future channel project (with respect to jurisdictional Waters of the U.S.). The channels would remain grass lined with a roughness coefficient of 0.04.

The channel side slope is assumed to be 4(horizontal) to 1(vertical). The width of the bottom shelf varies based on the assumed channel depth and capacity required to be conveyed within the channel high bank. The calculation also includes the assumption that 1.0 foot of freeboard is provided, along with 30-foot-wide maintenance berms on both sides of the channel. The following tables provides a summary of the 1% ACE flows and ultimate right-of-way widths for the channels. The ultimate right-of-way widths are also provided on **Exhibit D-1**.

	170 Hell How and endmate Hot (West Fork endedmite bujou)												
FROM	ТО	FLOW	DEPTH	BOTTOM WIDTH	RIGHT-OF-WAY WIDTH								
		(CIS)	(11)	(11)	(11)								
Upstream	CR383	1,727	6.5	130	240								
CR383	10101 trib	4,016	7.0	260	380								
10101 trib	10103 trib	5,505	7.5	320	440								
10103 trib	SH288	7,128	8.0	365	490								
SH288	Mer Pkwy	8,105	8.5	370	500								
Mer Pkwy	Mer Pkwy	8,907	9.0	370	500								
Mer Pkwy	10105 trib	9,664	9.5	370	500								
10105 trib	CR 63	12,940	10.0	435	580								
CR 63	Out	13,524	10.0	455	590								

 Table D1.
 1% ACE Flow and Ultimate R.O.W. (West Fork Chocolate Bayou)

Texas Water Development Board Contract Number: 2000040016 City of Iowa Colony Master Drainage Plan

Table D2.1% ACE Flow and Ultimate R.O.W. (Channel 101-05-00)												
	FROM	то	FLOW (cfs)	DEPTH (ft)	BOTTOM WIDTH (ft)	RIGHT-OF-WAY WIDTH (ft)						
Ī	Upstream	SH288	1,383	7.0	75	190						
Γ	SH288	Out	2,688	7.5	135	260						

### Table D3. 1% ACE Flow and Ultimate R.O.W. (North Hayes Creek)

FROM	ТО	FLOW (cfs)	DEPTH (ft)	BOTTOM WIDTH (ft)	RIGHT-OF-WAY WIDTH (ft)
Upstream	CR 64	329	5.0	32	130
CR 64	SH288	992	6.0	75	180
SH288	CR65	1,367	7.0	75	190
CR65	trib	1,985	8.0	80	200
trib	Out	1,985	9.0	80	210

### Table D4.1% ACE Flow and Ultimate R.O.W. (South Hayes Creek)

FROM	то	FLOW (cfs)	DEPTH (ft)	BOTTOM WIDTH (ft)	RIGHT-OF-WAY WIDTH (ft)
Upstream	Canal	455	6.0	32	140
Canal	CR 62	1,939	6.5	120	230
CR 62	trib	2,249	7.0	120	240
trib	SH288	2,684	7.5	120	240
SH288	CR65	2,893	8.5	120	250
CR65	Out	3,324	9.0	120	250

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# **Appendix E – Notice of Public Meeting**

#### NOTICE OF PUBLIC MEETING ON DEVELOPMENT OF IOWA COLONY MASTER DRAINAGE PLAN

The City of Iowa Colony, Texas will hold a public meeting at 6:00 p.m. on June 1, 2022, in the Council Chambers at the Iowa Colony City Hall, 12003 Iowa Colony Boulevard, Iowa Colony, Texas 77583 concerning the development of a master drainage plan for the City of Iowa Colony. The purpose of the meeting is to describe that project, to solicit input and comments from the affected public, to inform people of the project and how the study outcome will benefit the community, and to gather any additional project-related information that people have to share, including location of flood risk. A quorum of the City Council may be present and may participate in this meeting.

I, Kayleen Rosser, hereby certify that the above notice of meeting was posted pursuant to the Texas Open Meeting Act (Chapter 51 of the Texas Government Code) on May 25, 2022.

Kayleen Rosser, City Secretary

I hereby certify that the foregoing agenda remained posted at the entrance to the Iowa Colony City Hall where it was visible to the public at all times and on the City's website for at least 72 hours preceding the scheduled time of the meeting therein described.



Kayleen Rosser, City Secretary Date signed:

#### NOTICE OF PUBLIC MEETING ON DEVELOPMENT OF IOWA COLONY MASTER DRAINAGE PLAN

The City of Iowa Colony, Texas will hold a public meeting at 6:00 p.m. on February 23, 2022, in the Council Chambers at the Iowa Colony City Hall, 12003 Iowa Colony Boulevard, Iowa Colony, Texas 77583 concerning the development of a master drainage plan for the City of Iowa Colony. The purpose of the meeting is to describe that project, to solicit input and comments from the affected public, to inform people of the project and how the study outcome will benefit the community, and to gather any additional project-related information that people have to share, including location of flood risk. A quorum of the City Counsel may be present and may participate in this meeting.

I, Kayleen Rosser, hereby certify that the above notice of meeting was posted pursuant to the Texas Open Meeting Act (Chapter 51 of the Texas Government Code) on February 18, 2022.

Kayleen Rosser, City Secretary

I hereby certify that the foregoing agenda remained posted at the entrance to the Iowa Colony City Hall where it was visible to the public at all times and on the City's website for at least 72 hours preceding the scheduled time of the meeting therein described.

> Kayleen Rosser, City Secretary Date signed:



<u>(</u>\_)

# Appendix F – Texas Water Development Board Exhibit C & No Negative Impact Determination Tables

Existing Infrastructure ID	RFPG No.	RFPG Name	Counties	HUC8s	HUC12s	Watersheds	Feature Name	Infrastructure Type	Description	Natural or Constructed or Combination	Construction Date
North Hayes Creek - 28600	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Unnamed Bridge	Bridge	None	Constructed	Unknown
North Hayes Creek - 26820	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge @ Highway 288 and Valley Glen Rd	Bridge	None	Constructed	Unknown
North Hayes Creek - 22780	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge - Airline Rd No 2 E	Bridge	None	Constructed	Unknown
North Hayes Creek - 20050	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge - Airline Rd No 1 E	Bridge	None	Constructed	Unknown
North Hayes Creek - 19310	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge - Iowa Colony Blvd	Bridge	None	Constructed	Unknown
North Hayes Creek - 17750	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Unnamed Bridge	Bridge	None	Constructed	Unknown
North Hayes Creek - 13690	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge - Pursley Rd	Bridge	None	Constructed	Unknown
North Hayes Creek - 7900	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Unnamed Bridge	Bridge	None	Constructed	Unknown
North Hayes Creek - 3815	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Unnamed Bridge	Bridge	None	Constructed	Unknown
South Hayes Creek - 34700	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Culvert - Haye Creek Rd	Culvert	None	Constructed	Unknown
South Hayes Creek - 32000	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge - Airline Rd S	Bridge	None	Constructed	Unknown
South Hayes Creek - 30175	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge - Ailine Rd 1	Bridge	None	Constructed	Unknown
South Hayes Creek - 29175	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Unnamed Bridge	Bridge	None	Constructed	Unknown
South Hayes Creek - 24000	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge - Highway 288, Valley Glen Rd, Pleasant Valley Dr	Bridge	None	Constructed	Unknown
South Hayes Creek - 18000	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge - Iowa Colony Blvd	Bridge	None	Constructed	Unknown
South Hayes Creek - 3600	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge - Brister Road	Bridge	None	Constructed	Unknown
South Hayes Creek - 2875	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge - Live Oak Dr	Bridge	None	Constructed	Unknown
West Fork - 44336	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge - Karsten Rd	Bridge	None	Constructed	Unknown
West Fork - 38158	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge - Bullard Rd	Bridge	None	Constructed	Unknown
West Fork - 31872	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge - Highway 288	Bridge	None	Constructed	Unknown
West Fork -27770	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge - Iowa Colony Blvd	Bridge	None	Constructed	Unknown
West Fork - 27060	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Unnamed Bridge	Bridge	None	Constructed	Unknown
West Fork -23383	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge - Meridiana Pkwy	Bridge	None	Constructed	Unknown
West Fork - 17685	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge - Davenport Pkwy	Bridge	None	Constructed	Unknown
West Fork - 13730	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Unnamed Bridge	Bridge	None	Constructed	Unknown
West Fork - 12800	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge - Manvel-Sandy Point Rd	Bridge	None	Constructed	Unknown
West Fork - 8340	6	San Jacinto	Brazoria	12040204	120402040400	Mustang	Bridge	Bridge	None	Constructed	Unknown

Table F1.1.Existing Flood Infrastructure Summary (Texas Water Development Board Exhibit C Table Flood Infrastructure Tab)

	Infrastructure Dimensions			Existing			tion	Population .			Associated						
Existing Infrastructure ID	Diameter (ft)	Height (ft)	Width (ft)	Length (ft)	Area (acre)	Infrastructure ID	Level of Service	Condition	<b>Description</b>	Deficiency	Deficiency Description	Protected by Infrastructure	Owning Entity	Operating Entity	FMEs	FMSs	FMP s
North Hayes Creek - 28600							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
North Hayes Creek - 26820							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
North Hayes Creek - 22780							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
North Hayes Creek - 20050							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
North Hayes Creek - 19310							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
North Hayes Creek - 17750							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
North Hayes Creek - 13690							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
North Hayes Creek - 7900							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
North Hayes Creek - 3815							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
South Hayes Creek - 34700							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
South Hayes Creek - 32000							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
South Hayes Creek - 30175							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
South Hayes Creek - 29175							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
South Hayes Creek - 24000							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
South Hayes Creek - 18000							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
South Hayes Creek - 3600							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
South Hayes Creek - 2875							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
West Fork - 44336							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
West Fork - 38158							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
West Fork - 31872							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
West Fork -27770							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
West Fork - 27060							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
West Fork -23383							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
West Fork - 17685							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
West Fork - 13730							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
West Fork - 12800							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	
West Fork - 8340							Unknown	Unknown		Unknown	NA	Unknown	Unknown	Unknown	None	None	

1% Annual Chance Flood Risk														
<b>I.D.</b> #	RFPG No.	RFPG Name	County	Area in Flood Planning Region (sqmi)	Area in Floodplain (sqmi)	Number of Structures in Floodplain	Residential Structures in Floodplain	Population (daytime)	Population (nightime)	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)
1	6	San Jacinto	Brazoria	27.76	16.16	1111	1075	311	1002	657	9	25.76	11.88	0

#### ----ed Fyhihit C Table Fyisting Flood Disly Tab) **T** 11 TA 1 **.** . .. ~ 1.... ..... \*\*\* -

# Table F2.2: Existing Condition Flood Risk Summary (Texas Water Development Board Exhibit C Table Existing Flood Risk Tab)

							0.2%	Annual Chance Flo	ood Risk			
I.D. #	RFPG No.	RFPG Name	County	Area in Flood Planning Region (sqmi)	Area in Floodplain (sqmi)	Number of Structures in Floodplain	Residential Structures in Floodplain	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)
1	6	San Jacinto	Brazoria	27.76	19.33	1775	1713	1166	11	39.9	11.88	0

# Table F2.3: Existing Condition Flood Risk Summary (Texas Water Development Board Exhibit C Table Existing Flood Risk Tab)

				_				Possible F	Flood Prone Are	eas			
I.D. #	RFPG No.	RFPG Name	County	Area in Flood Planning Region (sqmi)	Area (sqmi)	Number of Structures in Flood Prone Area	Residential Structures in in Flood Prone Area	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)	Average SVI of features in floodplain or flood prone areas
1	6	San Jacinto	Brazoria	27.76	-	-	-	-	-	-	-	-	0.4567

Table F3.1.	Flood Mitigation Projects Summary (Tex	as Water Development Board Exhibit C Table FMP Tab)

FMP ID	RFPG No.	RFPG Name	FMP Name	Description	Associated Goals (ID)	Counties	HUC12s	Watershed Name	Project Type	Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)
063000001	6	San Jacinto	CIP	Capital Improvement Project proposing ponds along West Fork of Chocolate Bayou, North Hayes and South Hayes Creek		Brazoria	120402040400	06000001 West Fork of Chocolate Bayou, 06000002 North Hayes Creek, 06000003 South Hayes Creek, Mustang Bayou	Detention Ponds	27.85	Riverine
063000002	6	San Jacinto	Alternative	An alternative to the Capital Improvement Project proposing ponds and channel improvements along West Fork of Chocolate Bayou, North Hayes and South Hayes Creek		Brazoria	120402040400	06000001 West Fork of Chocolate Bayou, 06000002 North Hayes Creek, 06000003 South Hayes Creek, Mustang Bayou	Detention Ponds, Channel	27.85	Riverine

 Table F3.2.
 Flood Mitigation Projects Summary (Texas Water Development Board Exhibit C Table FMP Tab)

			F		Potential	Flood Risk											
FMP ID	Sponsor	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Funding Sources and Amount	Area in 100yr (1% annual chance) Floodplain (sqmi)	Area in 500yr (0.2% annual chance) Floodplain (sqmi)	Estimated number of structures at 100yr flood risk	Residential structures at 100-year flood risk	Estimated Population at 100-year flood risk	Critical facilities at 100-year flood risk (#)	Number of low water crossings at flood risk (#)*	Estimated number of road closures (#)	Estimated length of roads at 100- year flood risk (Miles)	Estimated farm & ranch land at 100-year flood risk (acres)		
063000001	Iowa Colon Drainage I Brazoria Drainage I Braz	y, Brazoria District 4, County District 5, coria	Ν	\$ 17,492,285.00	Yes, Federal, Iowa Colony, Brazoria	15.42	19.26	857	666	982	1	19		6.9	7309.9		
063000002	Iowa Colon Drainage l Brazoria Drainage l Braz	y, Brazoria District 4, County District 5, coria	Ν	\$ 30,878,913.00	Yes, Federal, Iowa Colony, Brazoria	14.09	18.63	884	483	775	1	19		6.9	6691.3		

 Table F3.3.
 Flood Mitigation Projects Summary (Texas Water Development Board Exhibit C Table FMP Tab)

		Reduction in Flood Risk													
FMP ID	Number of structures with reduced 100yr (1% annual chance) Flood risk	Number of structures removed from 100yr (1% annual chance) Flood risk	Number of structures removed from 500yr (0.2% annual chance) Flood risk	Residential structures removed from 100yr (1% annual chance) Flood risk	Estimated Population removed from 100yr (1% annual chance) Flood risk	Critical facilities removed from 100yr (1% annual chance) Flood risk (#)	Number of low water crossings removed from 100yr (1% annual chance) Flood risk (#)	Estimated reduction in road closure occurrences	Estimated length of roads removed from 100yr flood risk (Miles)	Estimated farm & ranch land removed from 100yr flood risk (acres)	Estimated reduction in fatalities (if available)	Estimated reduction in injuries (if available)			
063000001		46	95	35	28	0	1	0	16.9	619.2	0	0			
063000002		224	507	192	186	0	1	0	16.9	1237.8	0	0			

Table F3.4.	Flood Mitigation Projects Summary (Texas Water Development Board Exhibit C Table FMP	Tab)
1 4010 1 0111	Thou Minigation Trojects Summary (Texas Water Development Doura Exhibit C Tuble Thir	1

FMP ID	Pre-Project Level-of- Service	Post-Project Level-of-Service	Cost/ Structure removed	Percent Nature- based Solution (by cost)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Social Vulnerability Index (SVI)*	Water Supply Benefit (Y/N)	Traffic Count for Low Water Crossings	Benefit-Cost Ratio	RFPG Recommendation (Y/N)	Reason for Recommendation
063000001	10%	2.31%	\$968,845.89	0	Ν	Y	0.46	Ν				
063000002	10%	0.798%	\$375,999.45	0	Y	N	0.46	Ν				

			FMP	CIP	Alt
		Non-engineering studies: (e.g., flood plain regulation development; flood authority or revenue raising studies; public awareness program)	X	\$100,000	\$100,000.00
	Study costs and other (non-capital costs)	Engineering/technical/feasibility studies: (e.g. Hydrologic & hydraulic modeling/mapping; identification of potential flood risk reduction solutions; BCA and alternative analyses; project design; construction engineering)	х	\$768,716	\$1,452,996.88
		Surveying; geotechnical; testing	х	\$431,400	\$1,019,775.00
	Total study costs	1	X	\$1,300,116	\$2,572,771.88
	Construction-related (capital costs)	Design and Permitting	Х	\$5,765,371	\$10,897,476.62
	Construction-related (capital costs)	Environmental; archaeological & historical resources	Х	\$110,777	\$312,249.24
Non- recurring		Temporary and/or permanent easements; land acquisition	Х	\$39,108,138	\$63,327,045.32
		Mitigation; utility relocation	х	\$4,230,570.97	\$5,973,128.88
		Legal assistance; fiscal services & costs (bond counsel); outreach	х	\$100,000	\$100,000.00
		Direct construction costs of components/facilities	Х	\$38,435,805	\$72,649,844.15
		Buyouts; property elevations	Х	\$0	\$0.00
		Interest during construction	Х	\$3,170,954	\$5,993,612.14
		Project management (by engineer)	Х	\$480,000	\$960,000.00
		Inspection; pilot testing; warranty; manuals	Х	\$0	\$0.00
		(other special services or relevant costs)	х	\$0	\$0.00
		Contingency(s)	х	\$18,280,323	\$32,042,671.27
	Total construction cost	s	Х	\$109,681,939	\$192,256,027.62
TOTAL P	L PROJECT COSTS <sup>1</sup>		X	\$110,982,055	\$194,828,799.51
		Debt service \$ /yr [5%, (30 years)]	Х	\$184,970	\$324,714.67
	D '	Operation & Maintenance (Ponds) \$/yr	Х	\$90,000	\$110,000.00
	Kecurring	Operation & Maintenance (Channel) \$/yr	Х	\$0	\$52,800.00
		Other (i.e., public awareness campaign)	х	\$0	\$0.00
TOTAL A	NNUAL RECURRING	COSTS	X	\$274,970	\$487,514.67

Table F.4.	Potential Cost Summary (Texas Water Development Board Exhibit C Table Cost Template Tab)	,

<sup>1</sup> To be listed as total project cost in the project database.

# Table F.5. Texas Water Development Board No Negative Impact Determination Table

Region Number	FMP ID	FMP Name	FMP Meets ALL No Negative Impacts Requirements from Exhibit C Section 3.6.A (Yes/ No)	Negative Impact Description	Planning level Mitigation Plan (Yes/ No)	Mitigation Plan Description	No Negative Impact Determination (Yes/No)	Basis of No Negative Impact Determination (Model, Study, Engineering Judgement)	Model ID	Model Name	Model Submitted	Study Name and Location	Engineer of Record (Optional)	Engineering Judgement Description
6	063000001	CIP	Y		Y	9 detention ponds	Y	Model, Study and Engineering judgement	6000000002	Iowa Colony	HEC-RAS Version 6.3	City of Iowa Colony Master Drainage Plan, City of Iowa Colony, Brazoria County		Increase > 0.35ft in the 2D mesh, approximately 0.75 miles from the nearest plan feature. Likely due to computational mesh issue and not a result of the project.
6	063000002	Alternative	N	Increase in peak flows at the downstream end of the study area. No available ROW in study area to provide mitigation. Mitigation volume has been quantified and will need to be provided downstream, beyond the limits of the study area.	Y	9 detention ponds and channel improvements	N	Model and Study	6000000002	Iowa Colony	HEC-RAS Version 6.3	City of Iowa Colony Master Drainage Plan, City of Iowa Colony, Brazoria County		

# **Appendix G – Surveyed Bridges**

The surveyed bridges from The Wilson Survey Group, Inc.



June 30, 2022

Mr. Dinh Ho, P.E. Adico Consulting Engineers 2114 El Dorado Blvd. Suite 400 Friendswood, Texas 77546

RE: Survey Information on Existing Bridges on North Hayes Creek and South Hayes Creek in Iowa Colony, Brazoria County, Texas (WSG # 22-125)

Creek location	H.C.	L.C.	Piers	Pier size	Culvert diameter
A	48.91	47.50	9	10" DIA.	N/A
В	47.71	45.13	0	N/A	N/A
С	45.86	44.10	0	N/A	N/A
D	41.52	39.32	3	30" X 14'	N/A
F	53.60	N/A	0	N/A	10"
G	50.61	48.98	31	12" DIA.	N/A
Н	50.56	46.96	0	N/A	N/A
1	46.15	44.32	8	18" X 18"	N/A
J	35.51	33.79	10	16" X 16"	N/A
К	34.79	31.92	0	N/A	N/A

H.C. = High chord elevation L.C. = Low chord elevation

NOTE:

1. Elevations shown hereon are related to NAVD88 (Geoid18).

Michael D. Wilson R.P.L.S. Texas Registration No. 4821



2006 E. Broadway • Suite 103 • Pearland, Texas 77581 Ph (281) 485-3991 E-mail: mwilson@wilsonsurvey.com T.B.P.E.L.S. Firm No. 10014900

C

 $\mathbf{X}$ 

PENDI

2 ◀

Existing bridge/culvert crossings that were surveyed along North Hayes are shown in the figures below. The crossings are identified as A, B, C, & D. Refer to the **Exhibit G-1** at the end of this Appendix for locations.



Figure G-1 View of survey location "A"



Figure G-2 Cross section view of survey location "A"



Figure G-3 View of survey Location "B"



Figure G-4 Cross section view of survey Location "B"







Figure G-6 Cross Section view of survey location "C"



Figure G-7 View of survey location "D"



Figure G-8 Cross section view of survey location "D"

J

Existing bridge/culvert crossings that were surveyed along South Hayes are shown in the figures below. The crossings are identified as F, G, H, I, J, & K. Refer to the **Exhibit G-1** at the end of this Appendix for locations.



Figure G-9 View of survey location "F"



Figure G-10 Cross section view of survey location "F"



Figure G-11 View of survey location "G"



Figure G-12 Cross section view of survey location "G"



Figure G-13 View of survey location "H"



Figure G-14 Cross section view of survey location "H"



Figure G-15 View of survey location "I"



Figure G-16 Cross section view of survey location "I"

J



Figure G-17 View of survey location "J"



Figure G-18 Cross section view of survey location "J"

J
# Texas Water Development Board Contract Number: 2000040016 City of Iowa Colony Master Drainage Plan



Figure G-19 View of survey location "K"



Figure G-20

Cross Section view of location "K"

C

# **Appendix H – Benefit-Cost Analysis Tables**

# Table H1.Structural Damage Function

Flood	Flood	Residential		Commercial	
Depth	Depth	Average Home	Average	Industrial (Light)	Hospital/School
(in)	(ft)	(\$ per 2500 sf)	(\$ per sf)	(\$ per sf)	(\$ per sf)
1"	0.08	29,580.05	2.24	2.03	2.12
2"	0.17	29,673.85	3.34	2.99	3.23
3"	0.25	32,316.60	4.45	3.95	4.34
4"	0.33	42,540.02	5.55	4.92	5.45
5"	0.42	50,029.10	6.66	5.88	6.56
6"	0.50	57,419.98	7.76	6.85	7.67
7"	0.58	61,120.93	8.86	7.81	8.78
8"	0.67	64,822.99	9.97	8.77	9.89
9"	0.75	68,523.94	11.07	9.74	11.00
10"	0.83	72,223.80	12.18	10.70	12.11
11"	0.92	75,925.85	13.28	11.67	13.22
12"	1.00	79,626.81	14.38	12.63	14.33
13"	1.08	81,021.20	15.17	13.33	15.12
14"	1.17	82,415.58	15.96	14.03	15.91
15"	1.25	83,809.97	16.74	14.73	16.70
16"	1.33	85,204.36	17.53	15.42	17.49
17"	1.42	86,598.74	18.32	16.12	18.29
18"	1.50	87,993.13	19.10	16.82	19.08
19"	1.58	89,387.52	19.89	17.52	19.87
20"	1.67	90,781.90	20.68	18.22	20.66
21"	1.75	92,176.29	21.46	18.92	21.45
22"	1.83	93,570.68	22.25	19.62	22.24
23"	1.92	94,965.06	23.04	20.32	23.03
24"	2.00	96,359.45	23.82	21.01	23.83
25"	2.08	97,022.62	24.42	21.54	24.41
26"	2.17	97,685.79	25.02	22.06	24.99
27"	2.25	98,348.96	25.61	22.58	25.58
28"	2.33	99,012.13	26.21	23.10	26.16
29"	2.42	99,675.30	26.81	23.62	26.74
30"	2.50	100,338.47	27.41	24.14	27.33
31"	2.58	101,001.64	28.00	24.67	27.91
32"	2.67	101,664.82	28.60	25.19	28.50
33"	2.75	102,327.99	29.20	25.71	29.08
34"	2.83	102,991.16	29.80	26.23	29.66
35"	2.92	103,654.33	30.39	26.75	30.25

Flood	Flood	Residential		Commercia	1
Depth	Depth	Average Home (\$ per 2500	Average	Industrial (Light)	Hospital/School
(in)	(ft)	sf)	(\$ per sf)	(\$ per sf)	(\$ per sf)
36"	3.00	104,317.50	30.99	27.28	30.83
37"	3.08	105,128.25	31.63	27.80	31.54
38"	3.17	105,939.01	32.27	28.32	32.25
39"	3.25	106,749.77	32.91	28.84	32.95
40"	3.33	107,560.52	33.55	29.36	33.66
41"	3.42	108,371.28	34.19	29.88	34.37
42"	3.50	109,182.04	34.84	30.41	35.08
43"	3.58	109,992.79	35.48	30.93	35.78
44''	3.67	110,803.55	36.12	31.45	36.49
45"	3.75	111,614.30	36.76	31.97	37.20
46''	3.83	112,425.06	37.40	32.49	37.91
47"	3.92	113,235.82	38.04	33.02	38.61
48''	4.00	114,046.57	38.68	33.54	39.32
>48''	> 4.0	187,585.68	61.06	42.45	76.41

ltem 19.

#### Table H2.Number of Structures Inundated

	Number of Structures Inundated													
Structure Type	Existing					CIP				Alterna	ntive			
	500-Year	100-year	50-year	10-year	500-Year	100-year	50-year	10-year	500-Year	100-year	50-year	10-year		
Commercial	60	35	33	22	55	35	32	20	49	34	31	19		
Industrial	2	1	1	0	2	1	1	0	1	1	0	0		
Residential	1713	1713 1075 867 313		1655	1007	808	235	1368	840	656	193			
Critical Infrastructure	0	0	0	0	0	0	0	0	0	0	0	0		
Total No. of Inundated Structures	1775	1111	901	335	1712	1043	841	255	1418	875	687	212		
	ntial Struc.	58	68	59	78	345	235	211	120					
Removed Structures						68	60	80	357	236	214	123		
	973	666	-	-	1610	956	-	-						

## Table H3.Expected Damages to Structures Based on Flood Depth (Baseline Condition)

	Expected Damages to Structures based on Flood Depth												
Structure Type	Existing				CIP					Altern	ative		
	500-Year	100-year	50-year	10-year	500-Year	100-year	50-year	10-year	500-Year	100-year	50-year	10-year	
Commercial	\$8.5 M	\$6.1 M	\$5.3 M	\$3.2 M	\$8.3 M	\$5.9 M	\$5.0 M	\$2.4 M	\$8.1 M	\$6.0 M	\$4.6 M	\$2.4 M	
Industrial	\$0.1 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.1 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	
Residential	\$117.5 M	\$66.3 M	\$49.3 M	\$16.9 M	\$112.4 M	\$61.5 M	\$44.9 M	\$13.0 M	\$90.5 M	\$46.9 M	\$33.7 M	\$10.7 M	
Critical Infrastructure	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	
Total Damages (\$)	\$126.2 M	\$72.4 M	\$54.7 M	\$20.1 M	\$120.9 M	\$67.5 M	\$49.8 M	\$15.4 M	\$98.6 M	\$52.9 M	\$38.3 M	\$13.1 M	
Benefits per Storm Event (\$) \$5.3 M							\$4.8 M	\$4.7 M	\$27.6 M	\$19.6 M	\$16.3 M	\$7.0 M	

# Table H4.Estimated length of roads Inundated (Miles)

			Ler	ngth of Inuno	lated Road (	mi)	
	<b>Total Road</b>	otal Road Existing		CIP		Alter	native
	(mi)	500-YR	100-YR	500-YR	100-YR	500-YR	100-YR
Road Inundated	126.55	39.99	25.76	39.07	24.19	35.38	19.19
Road Removed from			0.93	1.57	4.61	6.57	

#### Table H5.Estimated length of roads Inundated (Miles)

			Average SV	VI of Buildin	gs Inundated	l per Event	
	Average SVI of	I of Existing		CIP		Alter	native
	Study Area	500-YR	100-YR	500-YR	100-YR	500-YR	100-YR
SVI	0.459	0.452	0.457	0.452	0.458	0.455	0.462
Change in Avera			0.000	0.001	0.003	0.005	

#### Table H6.Day & Night Populations at Risk

						Population	at Risk					
		Existi	ng		CIP				Alternative			
	500-Year	100-year	50-year	10-year	500-Year	100-year	50-year	10-year	500-Year	100-year	50-year	10-year
Day Population at Risk	717	311	263	103	656	301	257	92	517	297	240	70
Night Population at Risk	1614	1002	803	332	1565	959	755	287	1403	834	653	218
Average Population at Risk	1166	657	533	218	1111	630	506	190	960	566	447	144
				Day	61	10	6	11	200	14	23	33
Benefit - Population Removed fro		Night	49	43	48	45	211	168	150	114		
		Average	55	27	27	28	206	91	87	74		

### Table H7.Farm & ranch land inundated (sq. mi)

Total Area in	Inundated Area (sq mi)								
Study Area	Exis	ting	C	IP	Alternative				
(sq mi)	500-YR	100-YR	500-YR	100-YR	500-YR	100-YR			
13.80	9.52	6.91	9.42	6.62	8.90	5.58			
4.65	2.37	1.72	2.35	1.59	2.18	1.45			
18.45	11.88	8.62	11.77	8.21	11.08	7.02			
Remove	ed Inundated	Hay/Pasture	0.10	0.29	0.62	1.33			
Removed In	undated Culti	vated Crops	0.01	0.12	0.19	0.27			
Total Agri	cultural Lan	d Removed	0.11	0.41	0.81	1.60			
	Total Area in Study Area (sq mi) 13.80 4.65 18.45 Removed Removed In Total Agri	Total Area in Study AreaExis(sq mi)500-YR13.809.524.652.3718.4511.88Removed InundatedRemoved Inundated CultiTotal Agricultural Lan	Total Area in Study Area Existing   (sq mi) 500-YR 100-YR   13.80 9.52 6.91   4.65 2.37 1.72   18.45 11.88 8.62   Removed Inundated Hay/Pasture Removed Inundated Cultivated Crops   Total Agricultural Law Removed	Total Area in Study Area Inundated A   Study Area Existing C   (sq mi) 500-YR 100-YR 500-YR   13.80 9.52 6.91 9.42   4.65 2.37 1.72 2.35   18.45 11.88 8.62 11.77   Removed Inundated Hay/Pasture 0.10 0.01   Removed Inundated Cultivated Crops 0.01 0.11	Inundated Area (sq mi)   Study Area Existing CU   (sq mi) 500-YR 100-YR 500-YR 100-YR   13.80 9.52 6.91 9.42 6.62   4.65 2.37 1.72 2.35 1.59   18.45 11.88 8.62 11.77 8.21   Removed Inundated Hay/Pasture 0.10 0.29   Removed Inundated Cultivated Crops 0.01 0.12   Total Agricultural Land Removed 0.11 0.41	Inundated Area (sq mi)   Study Area (sq mi) Existing CIP Altern   13.80 9.52 6.91 9.42 6.62 8.90   4.65 2.37 1.72 2.35 1.59 2.18   18.45 11.88 8.62 11.77 8.21 11.08   Removed Inundated Hay/Pasture 0.10 0.29 0.62   Removed I tated Cultivated Crops 0.01 0.12 0.19   Total Agricultural Lamb Removed 0.11 0.41 0.81			

#### Table H8. **Benefit-Cost Ratio** Benefit-Cost Ratio Calculations (Project Life 30-years) Variable CIP Alt Capital Cost (Includes Design) (\$) \$110.98 M \$278.96 M **Operation & Maintenance Costs (\$/30 yrs)** \$8.25 M \$18.83 M Summary of Expected Benefits over the Project Lifetime Benefit to Residential Structures \$7.32 M \$19.77 M Benefit to Commercial Structures \$1.07 M \$0.99 M Benefit to Industrial Structures \$0.00 \$10,868.15 Benefit to Agricultural Land \$0.00 \$0.00 Total Expected Benefits\* (\$/30 yrs) \$8.31 M \$20.84 M BCR 0.07 0.07

\*Does not include monetized benefits for roadway and agricultural land

Sauda Ahmed\_<u>M</u> Malcolm Hamilton \_ <u>جج</u> Reem Zoun \_\_\_\_

June 29, 2023

Via Email

Mr. Wil Kennedy Mayor City of Iowa Colony 12003 Iowa Colony Blvd Iowa Colony, TX 77583

Re: City of Iowa Colony Iowa Colony Master Drainage Plan **TWDB FLOOD Project No. 40016** Planning Study Acceptance

Dear Mr. Kennedy:

The Texas Water Development Board (TWDB) has completed its review of the submitted documents for the Iowa Colony Master Drainage Plan for the City of Iowa Colony's 2020 Flood Infrastructure Fund (FIF) project, identified as Project No. 40016.

This master drainage plan is a joint effort funded by City of Iowa Colony, the Texas Water Development Board (TWDB), Brazoria County, Brazoria Drainage District No. 4 (BDD4), and Brazoria County Drainage District No. 5 (BCDD5). The purpose of the study was to provide a better understanding of the existing flood hazards along the study streams (West Fork Chocolate Bayou, North Hayes Creek and South Hayes Creek), using the most current rainfall data coupled with recently adopted regional drainage criteria and newer hydrologic and hydraulic model simulations, and to identify drainage improvement projects. Two alternative drainage improvement concepts were analyzed and compared to the existing conditions results to determine the benefits for reducing existing flood risks to properties within the study. Four deliverables were developed for the study.

- 1. Deliverable 01 consists of a Technical Report summarizing the procedures and findings of the planning study.
- 2. Deliverable 02 consists of the Hydrologic and Hydraulic modeling files associated with the Technical Report.
- 3. Deliverable 03 is a GIS folder containing map data used in the planning study.
- 4. Deliverable 04 is a completed Exhibit C Table for the FMP identified in the planning study.

Mr. Kennedy June 29, 2023 Page 2

By this letter we are accepting the project submittals as eligible under the FIF program and satisfying the FIF project's approved scope of work and all services to be performed. TWDB staff provides limited technical review of the submittals to ensure that work outlined in the grant scope of work was completed. It is expected that that the grantee will provide thorough technical review or have confidence that it was done to ensure the accuracy of the findings. This acceptance should not be construed as pre-empting any approval that may be required by other federal, state, or local government authorities.

The City is responsible for submitting any final payment request and documentation for reimbursement, along with a request to release any retained funds, no later than 60 days following the Grant Agreement Expiration Date of August 16, 2023. The City must provide a final accounting of funds expended on the Project and return any surplus funds remaining after the City has submitted a final accounting to the Executive Administrator.

Should you have any questions or require additional information, you may contact me at (512) 475-1824 or by email at sauda.ahmed@twdb.texas.gov. You may also contact Malcolm Hamilton, Team Manager, at (512) 475-1591.

Sincerely,

Sauda Alimed

Sauda Ahmed, P.E. Flood Protection Planning Grant Engineer Office of Planning *cc via email:* Robert Hemminger (City), Dinh Ho (Adico), Alan Hirshman (Adico), Ferne Maulsby (WGA), Kimberley Roper (WGA), Reem Zoun (TWDB), Malcolm Hamilton (TWDB).

#### ORDINANCE NO.

### AN ORDINANCE OF THE CITY OF IOWA COLONY, TEXAS, ADOPTING A MASTER DRAINAGE PLAN FOR THE CITY; FINDING FACTS; AND PROVIDING A SAVINGS CLAUSE, A SEVERANCE CLAUSE, AND AN EFFECTIVE DATE

**WHEREAS**, the master drainage plan is a joint effort funded by City of Iowa Colony, the Texas Water Development Board (TWDB), Brazoria County, Brazoria Drainage District No. 4 (BDD4), and Brazoria County Drainage District No. 5 (BCDD5); and

WHEREAS, the purpose of the study was to provide a better understanding of the existing flood hazards along the study streams (West Fork Chocolate Bayou, North Hayes Creek and South Hayes Creek), using the most current rainfall data coupled with recently adopted regional drainage criteria and newer hydrologic and hydraulic model simulations, and to identify drainage improvement projects; and

**WHEREAS**, the City Council held public hearings on the Master Drainage Plan at which the public was given the opportunity to give testimony and present written evidence; and

**WHEREAS**, the City Council of the City of Iowa Colony, Texas hereby adopts the Master Drainage Plan as a plan and policy for the city;

# NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF IOWA COLONY, TEXAS:

**SECTION 1.** That pursuant to the authority contained in section 213.004 of the Texas Local Government Code, the City of Iowa Colony hereby adopts the Master Drainage Plan that is attached hereto and incorporated herein in full.

**SECTION 2.** That the Master Drainage Plan shall be the plan and policy for drainage matters within the city and, to the extent permitted by law, the extra-territorial jurisdiction of the City of Iowa Colony, Texas.

**SECTION 3. Severance Clause.** That if any portion, of whatever size, of this ordinance is ever held to be invalid for any reason, then the remainder of this ordinance shall remain in full force and effect.

**SECTION 4. Effective Date.** That this ordinance shall be effective as of its passage and approval.

PASSED AND APPROVED JULY 17, 2023.

#### **CITY OF IOWA COLONY, TEXAS**

#### WIL KENNEDY, MAYOR

ATTEST:

# **KAYLEEN ROSSER, CITY SECRETARY**



# CITY COUNCIL WORKSESSION MINUTES

Monday, June 26, 2023 6:00 PM

Iowa Colony City Hall, 12003 Iowa Colony Blvd., Iowa Colony, TX 77583Phone: 281-369-2471•Fax: 281-369-0005•www.iowacolonytx.gov

STATE OF TEXAS COUNTY OF BRAZORIA CITY OF IOWA COLONY

BE IT REMEMBERED ON THIS, the 26th day of June 2023, the City Council of the City of Iowa Colony, Texas, held a Council Meeting at 6:00 P.M. at Iowa Colony City Hall, there being present and in attendance the following members to wit:

Mayor Wil Kennedy Councilmember Arnetta Murray Councilmember McLean Barnett Councilmember Tim Varlack Councilmember Steven Byrum-Bratsen Councilmember Sydney Hargroder

And Mayor Pro Tem Marquette Greene-Scott being absent, constituting a quorum at which time the following business was transacted.

# CALL TO ORDER

Mayor Kennedy called the work session to order at 6:03 P.M.

# CITIZEN COMMENTS

There were no comments from the public.

#### **ITEMS FOR DISCUSSION**

1. Discussion on HOA-provided landscape maintenance in certain subdivisions.

Matt Lawson with Rise Developments provided information as the developer and the HOA president. He stated there is a group of residents that want the provided lawn maintenance and a group that doesn't. It is a requirement per the PUD document as well as the condition noted on all final recorded plats. Councilmember Varlack asked how often the service is provided and what is included. Mr. Lawson stated the service is forty-two times a year and cost \$16.75 each time. This includes mowing, edging, and blowing the front yard. The service is only provided to the 40ft lots and townhomes. Councilmember Varlack asked if there was a mechanism to communicate the quality of the service being provided. Mr. Lawson stated that the residents can communicate directly with the community manager. He stated that when they receive issues, they address them. Councilmember Barnett pointed out that the document stated that they must maintain the landscaping and there may be a disconnect in the definition of that term. The home builder is

supposed to convey the information to the home buyer. Councilmember Barnett mentioned th  $\frac{\pi}{1}$  is a disconnect between the expectation and what service is being provided.

2. Discussion on AMI water meter project and related components.

Greg Smith presented an overview of the AMI water meter project. The project scope right now is to replace all water meters residential and commercial with the AMI system. It will be a fixed based system. They have already started to do a wastewater evaluation. They will also do a water rate development. They will assist the city with future projects as well.

3. Discussion on proposed multifamily development in Sierra Vista, MUD 32.

Kate Good presented the plan for the multifamily project as well as the requested variances. Mayor Kennedy recessed the work session at 7:05 P.M. They resumed the work session at 9:30 P.M. (See June 26, 2023 Council Meeting Minutes) Mayor Kennedy closed the worksesison at 10:43 P.M.

4. Discussion on possible changes to the city's sign ordinance.

There was no discussion on this item.

#### ADJOURNMENT

The work session was adjourned at 10:43 P.M.

# APPROVED THIS 17th DAY OF JULY 2023

Kayleen Rosser, City Secretary

Wil Kennedy, Mayor





Iowa Colony City Hall, 12003 Iowa Colony Blvd., Iowa Colony, TX 77583Phone: 281-369-2471•Fax: 281-369-0005•www.iowacolonytx.gov

STATE OF TEXAS COUNTY OF BRAZORIA CITY OF IOWA COLONY

BE IT REMEMBERED ON THIS, the 26th day of June 2023, the City Council of the City of Iowa Colony, Texas, held a Council Meeting at 7:00 P.M. at Iowa Colony City Hall, there being present and in attendance the following members to wit:

Mayor Wil Kenendy Councilmember McLean Barnett Councilmember Arnetta Murray Mayor Pro Tem Marquette Greene-Scott Councilmember Tim Varlack Councilmember Steven Byrum-Bratsen Councilmember Sydney Hargroder

And none being absent, constituting a quorum at which time the following business was transacted.

# CALL TO ORDER

Mayor Kennedy called the meeting to order at 7:10 P.M.

#### **INVOCATION**

Councilmember Varlack prayed aloud.

#### PLEDGE OF ALLEGIANCE

The Pledge of Allegiance and Texas Pledge were recited.

#### **SPECIAL PRESENTATIONS & ANNOUNCEMENTS**

Reserved for formal presentations and proclamations.

1. Presentation of a Proclamation for Juneteenth.

Mayor Kennedy presented the Juneteenth Proclamation to the NAACP, the Iowa Colony/Manvel Juneteenth Celebration Committee, and the Brazoria County Juneteenth Celebration Committee.

2. Consideration and possible action to adopt a resolution accepting the Fourth of July donations.

Motion made by Councilmember Murray to approve the resolution adopting the 4th of July donations, Seconded by Councilmember Barnett.

Voting Yea: Councilmember Murray, Councilmember Barnett, Mayor Pro Tem Greene-Scott, Mayor Kennedy, Councilmember Hargroder, Councilmember Byrum-Bratsen, Councilmember Varlack

# **CITIZEN COMMENTS**

Armanda Roberts mentioned the HOA provided landscape and that majority of the residents in these sections have put online that they want to get rid of the requirement.

Robert Wall asked that the City Council consider making updates to the zoning ordinance. He also thinks we should look at hiring a part time planner.

Lucy Ruiz stated there is an issue with loud music after 9:00 P.M and we do not currently have an ordinance addressing this.

Troy Frost stated that there is no way for residents to communicate the issues of the lawn services being provided by the HOA in this section of Meridiana. The quality of work is poor.

Colton Cockeral asked that the Council remove the requirement of lawn maitenance in these specific sections.

# **EXECUTIVE SESSION- 7:34 P.M.**

*Executive session in accordance with 551.071, 551.072, and 551.074 of the Texas Gov't Code to deliberate and consult with attorney on the following:* 

- 3. Discussion on potential real estate acquisition and matters related thereto.
- 4. Discussion on appointments to the Planning and Zoning Commission and the Iowa Colony Development Authority/Tax Increment Reinvestment Zone No. 2.

# POST EXECUTIVE SESSION- 8:25 P.M.

# **COUNCIL COMMENTS**

Councilmember Barnett thanked those in attendance. He did not have any other comments.

Councilmember Murray thanked those in attendance. She was absent from the last meeting as she was taking care of her elderly parents.

Mayor Pro Tem Greene-Scott thanked everyone who attended the Veteran's Day event and the Juneteenth celebration. She is looking forward to 4th of July. She would like us to play Whitney Houston's version of the National Anthem at the 4th of July event.

Councilmember Varlack mentioned that the heavy trucks utilizing roads cause difficulty and we need to look into that. There is a concrete crushing plant lot off SH 288 and Meridiana and is causing large stones to end up on the roads. We need to see if the contractors can sweep the streets, so residents are not having damage to their windshields. He had a great time at the Juneteenth celebration. He appreciates the community coming out to celebrate.

Councilmember Byrum-Bratsen mentioned the mulch in the park is not looking good. He asked if we can ask the landscapers to put out cones when they park on the street while working. Cedar Rapids needs to be looked at due to the potholes and damage to the road. We need to look at the noise ordinance. He stated that we did not do a Pride Proclamation this year.

Councilmember Hargroder thanked Mayor Pro Tem Greene-Scott for the Veteran's Day program. She agreed that we need to look at the noise ordinance. She is looking forward to the 4th of July event.

Mayor Kennedy thanked everyone for coming out to the meeting. He thanked Councilmember Byrum Bratsen for bringing to our attention the lack of Proclamation. He enjoyed the Juneteenth and Veteran's Day events and is looking forward to the 4th of July.

# **STAFF REPORTS**

- 5. Fire Marshal/Building Official Monthly Report
- 6. Police Department Monthly Report
- 7. Municipal Court Monthly Report
- 8. Public Works Monthly Report
- 9. City Engineer Monthly Report
- 10. Finance Monthly Reports

# **ITEMS FOR CONSIDERATION**

- 11. Consideration and possible action related to the purchase of real property. No action was taken.
- 12. Consideration and possible action to appoint members to the Planning and Zoning Commission.

Motion made by Councilmember Hargroder to appoint Mr. Warren Davis JR to the Planning and Zoning Commission, Seconded by Councilmember Murray. Voting Yea: Councilmember Murray, Councilmember Barnett, Mayor Pro Tem Greene-Scott, Mayor Kennedy, Councilmember Hargroder, Councilmember Varlack

13. Consideration and possible action to appoint members to the Iowa Colony Development Authority/Tax Increment Reinvestment Zone No. 2 Board.

Motion made by Councilmember Varlack to reappoint all existing members and those who are up for re appointment to the ICDA/TIRZ Board, Seconded by Councilmember Murray. Voting Yea: Councilmember Murray, Councilmember Barnett, Mayor Pro Tem Greene-Scott, Mayor Kennedy, Councilmember Hargroder, Councilmember Byrum-Bratsen, Councilmember Varlack

14. Consideration and possible action to set the date, time, and place for the public hearing on the proposed Crime Control and Prevention District budget.

Motion made by Councilmember Hargroder to hold the public hearing in the council chambers at City Hall at 7:00 P.M. on July 17, 2023 on the proposed Crime Control and Prevention District budget.

Voting Yea: Councilmember Murray, Councilmember Barnett, Mayor Pro Tem Greene-Scott, Mayor Kennedy, Councilmember Hargroder, Councilmember Byrum-Bratsen, Councilmember Varlack

15. Consideration and possible action to adopt an ordinance on first and final reading approving a variance to the transparency requirements in the City's Unified Development Code at 2320 Meridiana Parkway.

Motion made by Mayor Pro Tem Greene-Scott to adopt the ordinance to include the terms agreed upon in the staff report as presented, Seconded by Councilmember Murray. The City Secretary read the ordinance aloud. Motion failed with a five to two vote. Voting Yea: Councilmember Murray, Mayor Pro Tem Greene-Scott Voting Nay: Councilmember Barnett, Mayor Kennedy, Councilmember Hargroder, Councilmember Byrum-Bratsen, Councilmember Varlack 16. Consideration and possible action authorizing a service agreement with Kendig Keast Collaborative for Community Planning Services under the HGACBuy Cooperative Purchasing Program.

Motion made by Councilmember Varlack to approve a service agreement with Kendig Keast Collaborative for Community Planning Services under the HGACBuy Cooperative Purchasing Program, Seconded by Councilmember Byrum-Bratsen.

Voting Yea: Councilmember Murray, Councilmember Barnett, Mayor Pro Tem Greene-Scott, Mayor Kennedy, Councilmember Hargroder, Councilmember Byrum-Bratsen, Councilmember Varlack

 Consideration and possible action to adopt an ordinance on first and final reading authorizing the Iowa Colony Development Authority to issue its 2023 Bond Series in an amount not to exceed \$15 million.

Motion made by Councilmember Hargroder to adopt an ordinance on first and final reading authorizing the Iowa Colony Development Authority to issue its 2023 Bond Series in an amount not to exceed \$15 million, Seconded by Mayor Pro Tem Greene-Scott.

Voting Yea: Councilmember Murray, Councilmember Barnett, Mayor Pro Tem Greene-Scott, Mayor Kennedy, Councilmember Hargroder, Councilmember Byrum-Bratsen, Councilmember Varlack

 Consideration and possible action authorizing the purchase of furniture and equipment in the amount of \$289,702.11 for the Public Safety Building from the Texas Correctional Industries in accordance with the Local Government Code Chapter 497, Subchapter A, Prison Made Goods Act.

Motion made by Councilmember Hargroder to approve the purchase of furniture and equipment in the amount of \$289,702.11 for the Public Safety Building from the Texas Correctional Industries in accordance with the Local Government Code Chapter 497, Subchapter A, Prison Made Goods Act, Seconded by Councilmember Varlack.

Voting Yea: Councilmember Murray, Councilmember Barnett, Mayor Pro Tem Greene-Scott, Mayor Kennedy, Councilmember Hargroder, Councilmember Byrum-Bratsen, Councilmember Varlack

19. Consideration and possible action approving a contract for engineering and design services with Adico Consulting Engineers for the HGAC Mitigation Method of Distribution Grant Program through the Texas General Land Office.

Motion made by Councilmember Murray approving a contract for engineering and design services with Adico Consulting Engineers for the HGAC Mitigation Method of Distribution Grant Program through the Texas General Land Office, Seconded by Councilmember Barnett. Voting Yea: Councilmember Murray, Councilmember Barnett, Mayor Pro Tem Greene-Scott, Mayor Kennedy, Councilmember Hargroder, Councilmember Byrum-Bratsen, Councilmember Varlack

20. Consideration and possible action approving a resolution committing local matching funds for the HGAC Mitigation Method of Distribution Grant Program through the Texas General Land Office.

Motion made by Councilmember Varlack approving a resolution committing local matching funds for the HGAC Mitigation Method of Distribution Grant Program through the Texas General Land Office, Seconded by Mayor Pro Tem Greene-Scott.

Voting Yea: Councilmember Murray, Councilmember Barnett, Mayor Pro Tem Greene-Scott, Mayor Kennedy, Councilmember Hargroder, Councilmember Byrum-Bratsen, Councilmember Varlack 21. Consideration and possible action approving a proposed multifamily development in Sierra Vista, MUD 32. Ms. Kate Good resumed her discussion with the City Council regarding the proposed multifamily development. She asked the council if they were open to allowing them to put apartments on both tracts which would satisfy the requirement, due to the number of apartments they would be building on the two sites. Both parcels allow multiuse. Some of the council had reservations about these sites both having apartments due to the amount of people and traffic at the intersection. Ms. Good stated to the council that this is a good site as you want diversity in your community and the city currently does not have apartments. They are local developers. They feel good that this can meet their budget requirements. Councilmember Hargroder asked about projected rent. They are projecting around \$1500 a month. Councilmember Varlack mentioned that the previous developer did not mention anything about the renter's experience and that Ms. Good did. He does not see an issue with both tracts being apartments. His issue is what type of masonry will be used. Ms. Good and City Council members discussed that the masonry needs to be a certain percentage. Ms. Good individually spoke to each council member on the dais in a one-on-one discussion. After the discussion Councilmember Murray expressed her concern with the site in reference to all the changes that this site has been presented as including the lagoon, town homes, and now just apartments. Robert Hemminger, City Manager stated that per the development agreement they have two projects each consisting of up to 300 units. What they are presenting would satisfy the requirement of both with 312 units. Councilmember Hargroder and Councilmember Varlack are okay with this as it meets the requirement. City Engineer, Dinh Ho provided information on the site and provided city council with the land plan of this development. Mayor Pro Tem Greene-Scott stated she does not want all those apartments on that side. She stated the only reason she will support it is because it reduces the number of apartments. Ms. Good mentioned all residents living in these apartments will have to get a background check. Mayor Kennedy stated this would satisfy the multifamily in Sierra Vista and Sterling Lakes. Robert Hemminger, City Manager wanted it stated so there is no confusion that the parcel that has been discussed as the Sterling Lakes Entertainment District that if this comes as part of the PID proposal they could come up with condos on the land plan. Councilmember Barnett asked about the height of the ceilings. Ms. Good stated that the ceilings are 9ft with a 12-inch cavity fully insulated. Councilmember Varlack asked about masonry. The first floor can be achieved with 100% masonry Councilmember Hargroder asked. They want to discuss the negotiation of the 60% plus on top of the first floor. The developer and council discussed the number of parking spaces as well as the number of parking spaces that would be covered. They discussed the cost of covered parking spaces in this area due to building requirements for wind speed. Robert Hemminger, City Manager looked at requirements for facade to see if they were listed in the development agreement or in an ordinance. Robert confirmed that the requirement was in the development agreement and could be changed by City Council. Individual conversations took place between the presenter and council members. The Mayor asked the City Attorney what options for action can take place. Robert Hemminger, City Manager stated that they are voting on apartments and the council would take action and specify the deviations they are asking for. There was a discussion between Councilmember Byrum-Bratsen and Ms. Good on the percentage of masonry on the buildings.

Motion made by Councilmember Byrum-Bratsen to approve the proposed multifamily development in Sierra Vista MUD 32 with the stipulations of 100% masonry on the first floor building one west side and north side facing, building two north side, building three west side, building 4 not applicable, building five and six west side, building seven south and west side, and building eight and nine north and east side, eliminating covered parking and 60% masonry thereafter and approving the second site being apartments, Seconded by Mayor Pro Tem Greene-Scott.

Voting Yea: Councilmember Murray, Councilmember Barnett, Mayor Pro Tem Greene-Scott <u>"</u> Mayor Kennedy, Councilmember Hargroder, Councilmember Byrum-Bratsen, Councilmember Varlack

## **CONSENT ORDINANCES – SECOND READING**

Consideration and possible action to approve the following ordinances on second and final reading.

22. Consideration and possible action to approve an ordinance on second and final reading amending ordinance 2014-05 related to the additional homestead exemption for senior and disabled citizens.

Motion made by Councilmember Hargroder to adopt an ordinance on second and final reading amending ordinance 2015-05 related to the additional homestead exemption for seniors and disabled, Seconded by Mayor Pro Tem Greene-Scott.

Voting Yea: Councilmember Murray, Councilmember Barnett, Mayor Pro Tem Greene-Scott, Mayor Kennedy, Councilmember Hargroder, Councilmember Varlack Voting Nay: Councilmember Byrum-Bratsen

#### CONSENT AGENDA

Consideration and possible action to approve the following consent agenda items:

Motion made by Councilmember Hargroder to approve consent agenda items minus item number 32, Seconded by Councilmember Varlack.

Voting Yea: Councilmember Murray, Councilmember Barnett, Mayor Pro Tem Greene-Scott, Mayor Kennedy, Councilmember Hargroder, Councilmember Byrum-Bratsen, Councilmember Varlack

- 23. Consider approval of the May 15, 2023 worksession minutes.
- 24. Consider approval of the May 15, 2023 city council meeting minutes.
- 25. Consider approval of the May 18, 2023 city council meeting minutes.
- 26. Consider approval of the June 12, 2023 council budget work session minutes.
- 27. Consider approval of the 2022 annual TIRZ audit report.
- 28. Consider approval of a resolution for the body-worn camera grant.
- 29. Consider approval of the Sierra Vista Section 8B1 Final Plat.
- 30. Consider approval of the Sierra Vista Center Preliminary Plat.
- 31. Consider approval of the Garza's Lots Abbreviated Plat.
- 32. Consider approval of the Sterling Lakes Retail Preliminary Plat.

Motion made by Councilmember Hargroder to approve the Sterling Lakes Retail Preliminary Plat, Seconded by Councilmember Byrum-Bratsen.

Voting Yea: Councilmember Murray, Councilmember Barnett, Mayor Pro Tem Greene-Scott, Mayor Kennedy, Councilmember Hargroder, Councilmember Byrum-Bratsen, Councilmember Varlack

- 33. Consider approval of the Hayes Creek Estates Final Plat.
- 34. Consider approval of Infrastructure approval/acceptance for Sierra Vista Section 8A-Water, Sanitary, Drainage, and Paving Facilites into one year maintenance period.

#### ADJOURNMENT

The meeting was adjourned at 10:52 P.M.

# APPROVED ON THIS 17<sup>TH</sup> DAY OF JULY 2023

Kayleen Rosser, City Secretary

Wil Kennedy, Mayor





# CITY COUNCIL WORKSESSION MINUTES

Tuesday, June 27, 2023 5:30 PM

Iowa Colony City Hall, 12003 Iowa Colony Blvd., Iowa Colony, TX 77583Phone: 281-369-2471•Fax: 281-369-0005•www.iowacolonytx.gov

# STATE OF TEXAS COUNTY OF BRAZORIA CITY OF IOWA COLONY

BE IT REMEMBERED ON THIS, the 27th day of June 2023, the City Council of the City of Iowa Colony, Texas, held a Council Meeting at 5:30 P.M. at Iowa Colony City Hall, there being present and in attendance the following members to wit:

Mayor Wil Kennedy Councilmember Arnetta Murray Councilmember McLean Barnett Mayor Pro Tem Marquette Greene-Scott Councilmember Tim Varlack Councilmember Steven Byrum-Bratsen Councilmember Sydney Hargroder

And none being absent, constituting a quorum at which time the following business was transacted.

# CALL TO ORDER

Mayor Kennedy called the budget work session to order at 5:30 P.M.

# CITIZEN COMMENTS

There were no comments from the public.

#### **ITEMS FOR DISCUSSION**

1. Discussion on FY 23-24 City Budget, tax rate, and related matters.

Robert Hemminger, City Manager presented a budget overview power point presentation. The Council provided the Staff with their top priorities for the budget, including health insurance and more police protection. Mayor Pro Tem Greene-Scott asked if maybe we should hold off on the Municipal Government Center Phase 1 or with the cost of goods going up, or if we should continue Phase 1 for this upcoming year. Councilmember Varlack asked each staff member to state what their top priority for this upcoming budget year is. Each staff member stated their top priorities. It was stated by Councilmember Varlack that there seems to be a consensus on training/travel.

#### ADJOURNMENT

The work session was adjourned at 6:52 P.M.

Kayleen Rosser, City Secretary

Wil Kennedy, Mayor



ADICU CONSULTING ENGINEERS

Monday, May 22, 2023

Mariana Damian Advance Surveying, Inc. 10518 Kipp Way, Ste. A-2 Houston, TX 77099

#### Re: Sierra Vista Plaza Final Plat – REVISED Letter of Recommendation to Approve COIC Project No. SFP 210629-0863 Adico, LLC Project No. 16007-2-208

Dear Ms. Damian;

On behalf of the City of Iowa Colony, Adico, LLC has reviewed the fifth submittal of Sierra Vista Plaza final plat package received on or about May 22, 2023. The review of the plat is based on the City of Iowa Colony Subdivision Ordinance dated August 2002 and as amended.

Based upon our review, we have no objections to the plat as resubmitted on May 22, 2023. This LOR to Approve replaces the previous LOR to Approve dated April 20, 2023. Please provide two (2) sets of mylars and ten (10) folded copies of the plat to Kayleen Rosser, City Secretary, by no later Tuesday, May 30, 2023, for consideration at the June 6, 2023, Planning and Zoning Meeting.

Should you have any questions, please do not hesitate to contact our office.

Sincerely, Adico, LLC Dinh V. Ho. P.E.

TBPE Firm No. 16423

Cc: Kayleen Rosser Robert Hemminger File: 16007-2-208

#### STATE OF TEXAS COUNTY OF BRAZORIA

WE, SIERRA VISTA VENTURES, L.L.C., A TEXAS LIMITED LIABILITY COMPANY ACTING BY THROUGH ARIK KAROWALIA, MANAGING MEMBER OF SIERRA VISTA VENTURES, L.L.C., A TEXAS LIMITED LIABILITY COMPANY, OWNER OF THE PROPERTY SUBDIVIDED, IN THIS PLAT OF SIERRA VISTA PLAZA, DO HEREBY MAKE SUBDIVISION OF SAID PROPERTY FOR AND ON BEHALF OF SAID CORPORATION, ACCORDING TO THE LINES, LOTS, BUILDING LINES, STREETS, ALLEYS, PARKS AND EASEMENTS AS SHOWN HEREON AND DEDICATE FOR PUBLIC USE, THE STREETS, ALLEYS, PARKS AND EASEMENTS SHOWN HEREON FOREVER AND DO HEREBY WAIVE ALL CLAIMS FOR DAMAGES OCCASIONED BY THE ESTABLISHMENT OF GRADES AS APPROVED FOR THE STREETS AND DRAINAGE EASEMENTS DEDICATED, OR OCCASIONED BY THE ALTERATION OF THE SURFACE, OR ANY PORTION OF THE STREETS OR DRAINAGE EASEMENTS TO CONFORM TO SUCH GRADES, AND DO HEREBY BIND OURSELVES, OUR HEIRS, SUCCESSORS AND ASSIGNED TO WARRANT AND DEFEND THE TITLE TO THE LAND SO DEDICATED.

FURTHER, OWNERS HAVE DEDICATED AND BY THESE PRESENTS DO DEDICATE TO THE USE OF THE PUBLIC FOR PUBLIC UTILITY PURPOSE FOREVER UNOBSTRUCTED AERIAL EASEMENTS. THE AERIAL EASEMENTS SHALL EXTEND HORIZONTALLY AN ADDITIONAL ELEVEN FEET, SIX INCHES (11' 6") FOR TEN FEET (10' 0") PERIMETER GROUND EASEMENTS OR SEVEN FEET, SIX INCHES (7'6") FOR FOURTEEN FEET (14'0") PERIMETER GROUND EASEMENTS OR FIVE FEET, SIX INCHES (5' 6") FOR SIXTEEN FEET (16' 0") PERIMETER GROUND EASEMENTS, FROM A PLANE SIXTEEN FEET (16' 0") ABOVE THE GROUND LEVEL UPWARD, LOCATED ADJACENT TO AND ADJOINING SAID PUBLIC UTILITY EASEMENTS THAT ARE DESIGNATED WITH AERIAL EASEMENTS (U.E. AND A.E.) AS INDICATED AND DEPICTED HEREON, WHEREBY THE AERIAL EASEMENT TOTALS TWENTY ONE FEET, SIX INCHES (21' 6") IN WIDTH.

FURTHER, OWNERS HAVE DEDICATED AND BY THESE PRESENTS DO DEDICATE TO THE USE OF THE PUBLIC FOR PUBLIC UTILITY PURPOSE FOREVER UNOBSTRUCTED AERIAL EASEMENTS. THE AERIAL EASEMENTS SHALL EXTEND HORIZONTALLY AN ADDITIONAL TEN FEET (10' 0") FOR TEN FEET (10' 0") BACK-TO-BACK GROUND EASEMENTS, OR EIGHT FEET (8' 0") FOR FOURTEEN FEET (14' 0") BACK-TO-BACK GROUND EASEMENTS OR SEVEN FEET (7' 0") FOR SIXTEEN FEET (16' 0") BACK-TO-BACK GROUND EASEMENTS, FROM A PLANE SIXTEEN FEET (16' 0") ABOVE GROUND LEVEL UPWARD, LOCATED ADJACENT TO BOTH SIDES AND ADJOINING SAID PUBLIC UTILITY EASEMENTS THAT ARE DESIGNATED WITH AERIAL EASEMENTS (U.E. AND A.E.) AS INDICATED AND DEPICTED HEREON, WHEREBY THE AERIAL EASEMENT TOTALS THIRTY FEET (30' 0") IN WIDTH.

IN TESTIMONY, HERETO, THE SIERRA VISTA VENTURES, L.L.C., A TEXAS LIMITED LIABILITY COMPANY, HAS CAUSED THESE PRESENTS TO BE SIGNED BY ARIF KAROWALIA, ITS MANAGING MEMBER, THEREUNTO AUTHORIZED, AND ITS COMMON SEAL HEREUNTO AFFIXED, THIS \_\_\_\_\_ DAY OF \_\_\_\_, 2023.

SIERRA VISTA VENTURES, L.L.C., A TEXAS LIMITED LIABILITY COMPANY

ARIF KAROWALIA, MANAGING MEMBER

NOTARY PUBLIC STATE OF TEXAS

COUNTY OF

BEFORE ME, THE UNDER SIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED, SAMINA SADRUDDIN, MANAGING MEMBER OF SIERRA VISTA VENTURES, L.L.C., A TEXAS LIMITED LIABILITY COMPANY KNOWN TO ME, TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENTS, AND ACKNOWLEDGED TO ME TO ME THAT THEY EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS THIS \_\_\_\_\_ DAY OF \_

NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS

PRINT NAME

MY COMMISSION EXPIRES:

WE. TRUSTMARK NATIONAL BANK. OWNER AND HOLDER OF A LIEN AGAINST THE PROPERTY DESCRIBED IN THE PLAT KNOWN AS SIERRA VISTA PLAZA, SAID LIEN BEING EVIDENCED BY INSTRUMENT OF RECORD IN THE CLERK'S FILE NO. 2022066091 OF THE O.P.R.O.R.P. OF BRAZORIA COUNTY, TEXAS, DO HEREBY IN ALL THINGS SUBORDINATE OUR INTEREST IN SAID PROPERTY TO THE PURPOSES AND FECTS OF SAID PLAT AND THE DEDICATIONS AND RESTRICTIONS SHOWN HEREIN TO SAID SUBDIVISION PLAT AND WE HEREBY CONFIRM THAT WE ARE THE PRESENT OWNER OF SAID LIEN AND HAVE NOT ASSIGNED THE SAME NOR ANY PART THEREOF.

PRINT NAME & TITLE

STATE OF TEXAS COUNTY OF HARRIS

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGED TO ME THAT THEY EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED.

GIVEN	UNDER	MY I	HAND	AND	SEAL	OF (	OFFICE,	THIS	THIS		DAY OF	,	20
										-			
ΝΟΤΑΓ	RY PUBL		N AND	FOR	THE	STA	TE OF	TEXAS	6				

MY COMMISSION EXPIRES:

APPROVED BY BRAZORIA COUNTY DRAINAGE DISTRICT # 5

DATE

DATE

LEE WALDEN, P.E. POSITION 1

PRINT NAME

KELLY L. OSBURN POSITION 3

MARK ROLLER SECRETARY/TREASURER

NA7AR SABTI P.E., C.F.M. DISTRICT ENGINEER

DATE

DATE

NOTE: PROJECT FIELD STARTUP WILL START WITHIN 365 CALENDAR DAYS FROM DATE HERE SHOWN. CONTINUOUS AND REASONABLE FIELD SITE WORK IS EXPECTED.

BCDD 5 I.D. # \_\_\_\_\_

THIS IS TO CERTIFY THAT I HENRY M. SANTOS, A REGISTERED PUBLIC LAND SURVEYOR OF THE STATE OF TEXAS, HAVE PLATTED THE ABOVE SUBDIVISION FROM AN ACTUAL SURVEY ON THE GROUND; AND THAT ALL BLOCK CORNERS, LOT CORNERS AND PERMANENT REFERENCED MONUMENTS HAVE BEEN SET, THAT PERMANENT CONTROL POINTS WILL BE SET AT COMPLETION OF CONSTRUCTION AND THAT THIS PLAT CORRECTLY REPRESENTS THAT SURVEY MADE BY ME.

HENRY M. SANTOS TEXAS REGISTRATION NO. 5450



ENGINEER'S PLAT AFFIDAVIT

BEST OF MY KNOWLEDGE.

RANA MAHMOOD, P.E., CFM, MCE LICENSED PROFESSIONAL ENGINEER NO. 101163 TEXAS FIRM F-12333

HEIGHTS ENGINEERING, LLC FIRM REG. 12603 SOUTHWEST FWY STE 285 (832) 999-4764

METES AND BOUNDS DESCRIPTION

BEING A 4.0639 ACRE TRACT OF LAND SITUATED IN SECTION 51 OF THE H.T. & B. R.R COMPANY SURVEY, ABSTRACT NO. 288, BRAZORIA COUNTY, TEXAS, BEING A PART OF THAT CERTAIN 240.9 ACRE OF LAND DESIGNATED AS TRACT II AND DESCRIBED IN THE DEED TO MCALISTER OPPURTUNITY FUND 2012, L.P. RECORDED IN FILE NUMBER 2013060096, TOGETHER WITH ALL OF THAT CERTAIN 2.356 ACRE TRAQCT OF LAND DWESIGNATED AS TRACT 8 AND DESCRIBED IN DEED TO LAND TEJAS STERLING LAKES SOUTH, L.L.C.,, BEING A PART OF LOT 603 OF EMIGRATION LAND COMPANY PLAT OF SECTIONS 50, 51 & 56 H.T. & B. AND OF 2, 3 & 4 L&N., A SUBDIVISION RECORDED IN VOLUME 2, PAGE 113 OF HE PLAT RECORDS OF BRAZORÍA COUNTY, TEXAS; SAID 4.0639 ACRE TRACT BEING MORÉ PARTICULARLY DESCRIBED AS FOLLOW:

BEGINNING AT, A 5/8 INCH CAPPED IRON ROD FOUND ON THE WEST RIGHT-OF-WAY LINE OF SIERRA VISTA BOULEVARD (WIDTH VARIES) AS DEDICATED BY THE PLAT OF SIERRA VISTA, SECTION ONE, SUBDIVISION RECORDED IN DOCUMENT NO. 2017058170, OF THE PLAT RECORDS OF BRAZORIA COUNTY, TEXAS, BEING THE SOUTHEAST CORNER OF SAID 2.356 ACRE TRACT; THENCE, SOUTH 87 DEGREES 16 MINUTES 24 SECONDS WEST, 565.00 FEET ALONG THE SOUTH LINE OF

SAID 2.356 ACRE TRACT, TO A 5/8 INCH CAPPED IRON ROD FOUND MARKING THE SOUTHWEST CORNER OF SAID 2.356 ACRE TRACT AND THE TRACT HEREIN DESCRIBED; THENCE, NORTH 02 DEGREES 43 MINUTES 36 SECONDS WEST, 313.52 FEET TO A 5/8 INCH CAPPED

IRON ROD FOUND IN THE SOUTH RIGHT-OF-WAY LINE OF MIDIANA PARKWAY (A.K.A. COUNTY ROAD NO. 56-120 FEET WIDE), MARKING THE NORTHWEST CORNER OF THE TRACT HEREIN DESCRIBED; THENCE, NORTH 87 DEGRES 16 MINUTES 24 SECONDS EAST, 540.11 FEET ALONG THE SOUTH

RIGHT-OF-WAY LINE OF SAID MERIDIANA PARKWAY, COMMON WITH THE NORTH LINE OF THE TRACT HEREIN DESCRIBED, TO A 5/8 INCH CAPPED IRON ROD FOUND MARKING A POINT OF CURVATURE AT THE MOST NORTHERLY NORTHEAST CORNER OF THE TRACT HEREIN DESCRIBED AND THE BEGINNING OF CURVE TO THE RIGHT:

THENCE, WITH SAID CURVE TO THE RIGHT, HAVING A CENTRAL ANGLE OF 90 DEGREES 01 MINUTES 19 SECONDS, A RADIUS OF 25.00 FEET, AN ARC LENGTH OF 39.28 FEET AND A CHORD WHICH BEARS SOUTH 47 DEGREES 42 MINUTES 57 SECODNDS EAST, 35.36 FEET TO A 5/8 INCH CAPPED IRON ROD FOUND IN THE WESTERLY RIGHT-OF-WAY LINE OF SAID SIERRA VISTA BOULEVARD MARKING A POINT OF TANGENCY AND THE MOST EASTERLY NORTHEAST CORNER OF THE TRACT HEREIN DESCRIBED; THENCE, SOUTH 02 DEGREES 42 MINUTES 17 SECONDS EAST, 288.51 FEET ALONG THE WESTERLY F-WAY LINE OF SAID SIERRA VISTA BOULEVARD, COMMON WITH THI TRACT HEREIN DESCRIBED TO THE POINT OF BEGINNING AND CONTAINING WITHIN THESE METES AND BOUNDS 4.0639 ACRES OR 177,023 SQUARE FEET OF LAND. GENERAL NOTES:

- BEARINGS ARE BASED FROM TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NAD 83 CORS ADJUSTMENT BASED FROM REDUNDANT RTK GPS OBSERVATIONS. DISTANCES HEREON ARE SURFACE DATUM. TO CONVERT TO GRID MULTIPLY BY A COMBINED PROJECT ADJUSTMENT FACTOR OF 0.999864868627
- 2. ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) MAP NO. 48039C 0115K AND 48039C 0120K, BOTH WITH THE EFFECTIVE DATE OF DECEMBER 30, 2020, THE PROPERTY IS LOCATED IN UNSHADED ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN.
- THIS PLAT HAS BEEN PREPARED TO MEET THE REQUIREMENTS OF THE CITY OF IOWA COLONY STATE OF TEXAS, BRAZORIA COUNTY. THIS PLAT WAS PREPARED FROM INFORMATION PROVIDED BY INTEGRITY TITLE COMPANY, JOB NO. 1931160A EFFECTIVE DATE JANUARY 24, 2022.
- 4. THIS TRACT OF LAND LIES WITHIN THE EXTRA-TERRITORIAL JURISDICTION OF THE CITY OF IOWA COLONY AND IS SUBJECT TO ITS CODE OF ORDINANCES AND BY DEVELOPMENT AGREEMENT BETWEEN THE CITY OF IOWA COLONY, TEXAS AND LAND TEJAS STERLING LAKES SOUTH, LLC AND MCALISTER OPPORTUNITY FUND 2012, DATED FEBRUARY 15, 2016 AND AS AMENDED.
- 5. SLAB ELEVATIONS (FINISHED FLOOR) SHALL BE SET 2 FEET ABOVE THE MINIMUM SLAB ELEVATIONS DEFINED.
- 6. THE DRAINAGE EASEMENTS SHOWN HEREON SHALL BE KEPT CLEAR OF FENCES, BUILDINGS, FOUNDATIONS, PAINTINGS AND OTHER OBSTRUCTION FOR THE OPERATION AND MAINTENANCE OF DRAINAGE FACILITIES.
- 7. ALL PROPERTY SHALL DRAIN INTO THE DRAINAGE EASEMENT ONLY THROUGH AN APPROVED DRAINAGE STRUCTURE.
- 8. ALL PUBLIC STORM SEWER SHALL BE MAINTAINED BY BCMUD 32. PRIVATE STORM SEWER SHALL BE MAINTAINED BY PROPERTY OWNERS.
- 9. THIS SUBDIVISION EMPLOYS A DRAINAGE SYSTEM, WHICH UTILIZES STREETS AND ADJACENT PROPERTIES WITHIN THE SUBDIVISION PLAT BOUNDARY TO STORE AND CONVEY STORM WATER. | ESMT. - EASEMENT THUS, DURING STORM EVENTS, PONDING OF WATER SHOULD BE EXPECTED TO OCCUR IN THE SUBDIVISION
- 10. NO BUILDING PERMITS WILL BE ISSUED UNTIL ALL STORM DRAINAGE IMPROVEMENTS, WHICH MAY | B.C.D.R. BRAZORIA COUNTY DEED RECORDS INCLUDE DETENTION, HAVE BEEN CONSTRUCTED.
- 11. THE PROPERTY SUBDIVIDED IN THE FOREGOING PLAT LIES WITHIN BRAZORIA COUNTY DRAINAGE DISTRICT NO. 5.
- 12. ALL EASEMENTS SHOWN HEREON THIS PLAT ARE CENTERED ON LOT LINES UNLESS OTHERWISE SHOWN.
- 13. OTHER THAN WHAT IS SHOWN HEREON, THERE ARE NO PIPELINE EASEMENTS OR PIPELINES WITHIN -THE BOUNDARIES OF THIS PLAT.
- 14. ALL BUILDING LINES ALONG STREET RIGHT-OF-WAY ARE SHOWN HEREON.
- 15. SIDEWALK MUST BE CONSTRUCTED AS PART OF THE ISSUANCE OF A BUILDING PERMIT FOR EACH EACH TRACT, IF SIDEWALKS ARE REQUIRED.
- 16. A MINIMUM OF 5 FOOT WIDE SIDEWALKS SHALL BE REQUIRED ALONG STREETS AND SHALL CONFORM TO THE CITY OF IOWA COLONY'S ENGINEERING DESIGN CRITERIA MANUAL.
- 17. ALL WATER AND WASTEWATER FACILITIES SHALL CONFORM TO THE CITY OF IOWA COLONY'S ENGINEERING DESIGN CRITERIA MANUAL.
- 18. THE APPROVAL OF THE FINAL PLAT WILL EXPIRE TWO (2) AFTER FINAL PLAT HAS BEEN SUBMITTED FOR FINAL APPROVAL BY THE CITY COUNCIL IS CONSTRUCTION OF THE IMPROVEMENTS HAS NOT L COMMENCED WITHIN TWO (2) YEAR PERIOD OR THE ONE (1) YEAR EXTENSION PERIOD GRANTED BY THE CITY COUNCIL.
- 19. NO BUILDING PERMITS WILL BE ISSUED UNTIL ALL THE STORM DRAINAGE IMPROVEMENTS, WHICH MAY INCLUDE DETENTION, HAVE BEEN CONSTRUCTED
- 20. ABSENT WRITTEN AUTHORIZATION BY THE AFFECTED UTILITIES, ALL CENTERPOINT ENERGY AND THE CITY OF IOWA COLONY UTILITY EASEMENTS MUST BE UNOBSTRUCTED BY THE PROPERTY OWNER. ANY UNAUTHORIZED IMPROVEMENTS OR OBSTRUCTION MAY BE REMOVED BY THE UTILITY AT THE PROPERTY OWNER'S EXPENSE.



#### City of Iowa Colony Quarterly Investment Report

			4/01/2023	6/30/2023	Accrued	
Investment Description	Maturity Date	<u>Yield</u> (Interest Rate)	Beginning Market Value	Changes	Ending Market Value	Interest Earnings
Texstar Investment Pool	Liquid		111,173	1387.28	112,092	1387
Veritex Community C/D	9/12/2023	3.25%	101,720	833.27	102,553	833
Veritex Community C/D	4/30/2023	1.25%	145,000	446.91	145,000	447
First State Bank - Manvel C/D	10/28/2023	2.15%	155,387	283.75	155,387	284
Frost Bank Invetsment C/D	2/23/2025	3.15%	6,290	0.00	6,290	0
Frost Bank-TX First Bank US Treasury NB	7/17/2023	12.50%	3,496,000	0.00	3,710,841	0

This report is prepared accordance with and complies with the City Investment Policy and the Texas Public Investment Act

City Manager

Senior Accountant