SAN JACINTO RIVER AUTHORITY

Woodlands Division MUD Report for March 2019

WASTEWATER

Parameter	WWTF No. 1 (Outfall 001)		WWTF No. 2		WWTF No. 3	
	Permitted	***Reported***	***Permitted***	***Reported***	***Permitted***	***Reported***
Flow (avg.-high; MGD)	7.8 avg.	3.163 – 3.649	6.0 avg.	3.563-4.139	0.9 avg.	0.520-0.635
2-Hour Peak Flow (MGD) Rainfall at Highest Peak	18	03-24-2019 5.530 0.00"	15.56	03-27-2019* 10.260 0.00"	3.6	03-02-2019 0.635 0.00"
CBOD5 (30 Day avg.; mg/l)	10	2.9	10	3.2	10	5.7
TSS (30 Day avg.; mg/l)	15	2.6	15	3.2	15	7.2
NH3-N (30 Day avg.; mg/l)	3	0.2	2.6	1.0	3	0.4
pH (min-max)	6.0 - 9.0	6.72-7.40	6.0 - 9.0	6.58-7.31	6.0 - 9.0	6.31-7.45
DO (minimum; mg/l)	4.0 (min)	7.85	4.0 (min)	6.29	6.0 (min)	7.41
Disinfection (max Cl2; mg/l)	0.1 mg/l	0.04	0.1 mg/l	0.02	1 mg/l (min) 4 mg/l (max)	1.08 3.61
E.coli (max col/100 ml)	200	2.0	200	27.0	399	2.0

** The 2-hour Peak Flow this month was due to a plant shutdown and process adjustments, not rainfall.*

WATER

Parameter	February 2019		March 2019	
	Groundwater	Surface Water	Groundwater	Surface Water
Average (gal/day)	5,673,000	3,531,000	8,449,000	3,664,000
Minimum (gal/day)	4,608,000	3,215,000	1,330,000	3,092,000
Peak-day (gal/day)	8,113,000	3,720,000	12,809,000	4,192,000
Monthly (gallons)	158,834,000	98,881,000	261,905,000	113,588,000
Percentage GW/SW	61%	39%	68%	32%
Average Avail. Capacity	65,084,000	NA	64,567,000	NA
Rainfall (inches)	2.00		0.76	
Total Usage	257,715,000		375,493,000	
Fiscal year-to-date blend	57% GW / 43% SW			

(Total water usage decreased 11.34% compared to March 2018) Cumulative Total Water Usage: 916,950,000 gallons - March 2019

ENVIRONMENTAL

Parameter	March 2019
Current Total Permits	465
Interceptor Inspections	139
Enforcement Action Taken	10

PROJECT UPDATE

(As of March 31, 2019)

Item	Project Description	Project Highlights	Budget	Contract Amount	Total Contract Amount to Date *	Invoiced to Date	Estimated Completion Date
1	WPSP1 – Wastewater Treatment Facility No. 1 Solids Processing <u>Bond funded</u>	The contractor was given Notice to Proceed on December 5, 2018. The contractor has been working to complete underground piping installation, and is currently working to complete the building foundation.	Design $630,000 Construction $5,519,000	Design $564,965 Construction $5,220,727	$5,785,692	$683,347	Oct 2019
	WT1DW – Wastewater Treatment Facility No. 1 Additional Sludge Dewatering Unit <u>Capacity funded</u>	This project will be completed in conjunction with WPSP1 (above). WT1DW is a capacity project providing the additional belt filter press for the project.	Design $16,721 Construction $1,190,000	Design $18,670 Construction $949,255	$967,925	$30,790	
2	WW1701 – Wastewater Treatment Facility No. 2 Disinfection System Improvements	Contractor is 100% complete with installation of disinfection system which has been tested and been put in service. Contractor has proceeded to demo the old UV structures to complete project. Substantial completion is anticipated at the end of April 2019.	Design $448,000 Construction $6,500,000	Design $439,245 Construction $6,327,404	$6,766,650	$6,332,587	Apr 2019

Item	Project Description	Project Highlights	Budget	Contract Amount	Total Contract Amount to Date *	Invoiced to Date	Estimated Completion Date
3	WWFM5R – Lift Station No. 5 Force Main Replacement	Design of the project is ongoing. The consultant completed the 90% design on May 07, 2018. The 100% design submittal is underway; however, final completion is pending easement acquisition along McDonald Road. Easement acquisition is in progress. Completion of easement acquisition is anticipated to be complete by early summer 2019.	Design $688,000 Construction $4,510,000	Design $537,496 Construction TBD	$537,496	$244,741	May 2021
4	WWBBGM – Rehabilitation of Bear Branch Gravity Main <u>Bond funded</u>	The design consultant provided the 90% design submittal on January 22, 2019. Final design revisions are in progress. Contractor access routes and construction staging sites have been identified and developed, and are being discussed with landowners. Easement documents are being prepared to acquire the temporary easements. Also, have been coordinating with Cochran's Crossing Village Association.	Design $1,882,000 Construction $16,299,000	Design $1,065,459 Construction TBD	$1,065,459	$370,308	Apr 2020
5	WWF3LS – WWTF No. 3 Lift Station Rehabilitation	Partial Substantial Completion was issued on December 19, 2018 and punch list items were generated. Punch list items are now complete.	Design $237,000 Construction $1,577,000	Design $126,366 Construction $543,193	$669,559	$635,556	Feb 2019
6	WWLS4R – Lift Station No. 4	Contractor continues installation of on at- grade foundations, mechanical, and plumbing	Design $266,000	Design $235,155	$1,585,574	$1,162,438	Jun 2019

Item	Project Description	Project Highlights	Budget	Contract Amount	Total Contract Amount to Date *	Invoiced to Date	Estimated Completion Date
	Replacement (Crystal Lake Lane)	installations. The new generator was delivered to the site and installed. Electrical subcontractor is working on connections to put system online.	Construction $1,459,000	Construction $1,350,419			
7	WWLS23 – Lift Station No. 23 Rehabilitation (Baker Hughes)	Startup of site occurred on February 14, 2019 with no issues and partial substantial completion on March 1, 2019. Contractor has completed all punch list items.	Design $68,000 Construction $372,000	Design $103,012 Construction $500,840	$603,852	$550,348	Mar 2019
8	WA17WL – Water Distribution – Looping Water Mains	Contractor has completed the installation of the water line along Ken Lakes Drive, Research Forest Drive, and Chipwyck Way/FM2978. Contractor will be addressing all punch list items and submitting documents for closeout. The replacement of the 12-inch water line crossing Panther Branch at Grogan's Point has been added to this project. The construction contract for Alcott, Inc. dba TCA was approved at the SJRA Board of Directors meeting on February 28, 2019. The Notice to Proceed is set for April 1, 2019 to start construction.	Design $198,000 Construction $972,000	Design $36,708 Construction $709,609	$746,317	$409,629	May 2019
9	WW17GR – Gravity Main Rehabilitation – Segments 35, 50, and 50A	Notice to Proceed was issued to contractor on December 17, 2018. Contractor completed cleaning and televising, and CIPP of Segment 35 (Sawdust and Grogan's Point). Contractor setting up diversion	Design $60,000 Construction	Design $61,396 Construction	$1,338,475	$221,150	Jul 2019

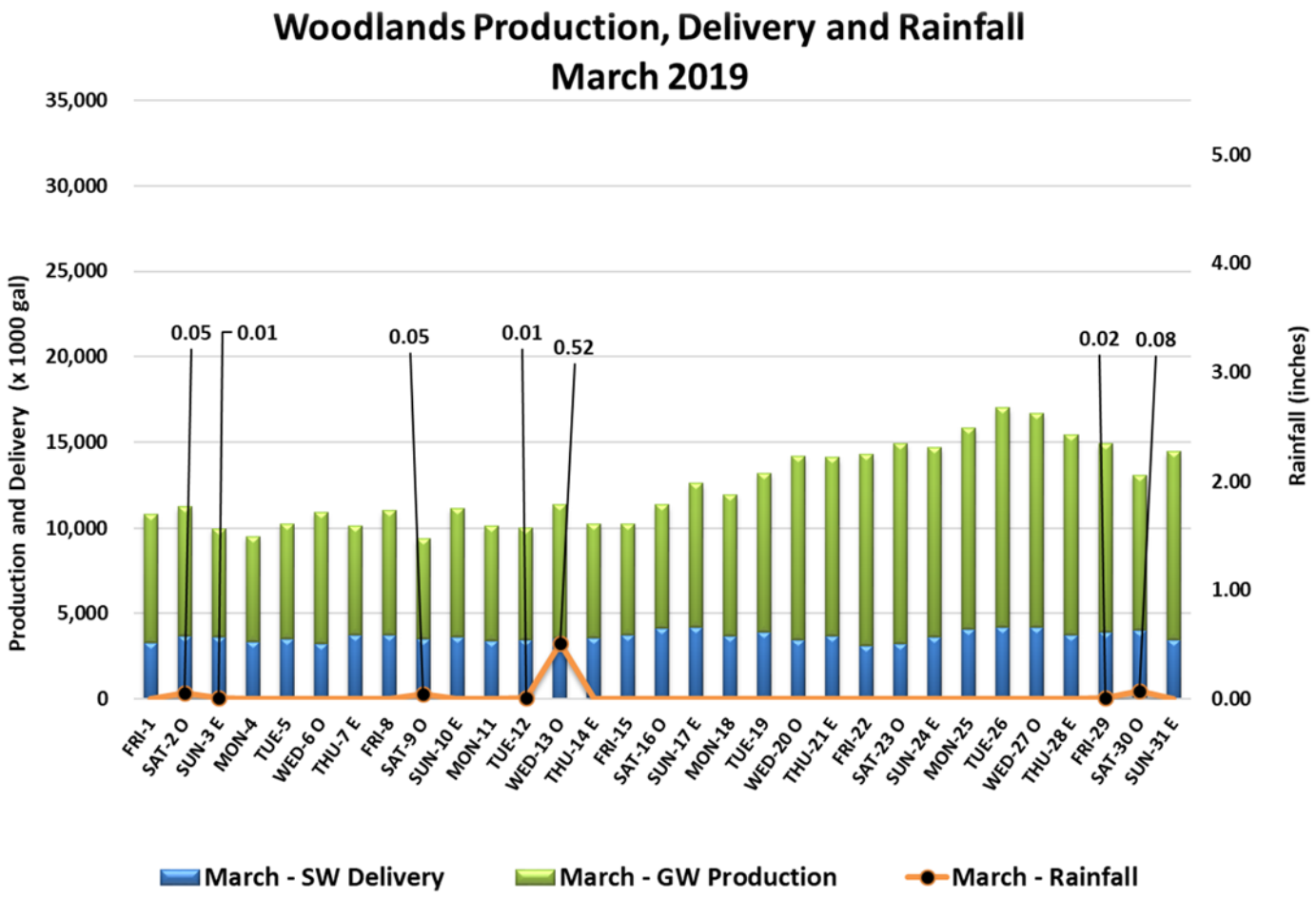
Item	Project Description	Project Highlights	Budget	Contract Amount	Total Contract Amount to Date *	Invoiced to Date	Estimated Completion Date
		bypass pumps and piping for Segments 50 and 50A (W. Isle Place, Leeward Cove Dr. and Pleasure Cove Dr.). Installation expected to be completed mid to late-April, at which point cleaning and televising of the segments will commence.	$1,328,000	$1,277,079			
10	WWF1AB – WWTF No. 1 Replacement of Aeration Basin Nos. 1 and 2 <u>Bond funded</u>	Preliminary design is ongoing. Options for design were evaluated and discussed. The design consultant submitted a draft Preliminary Engineering Report (PER) on March 3, 2019. The Consultant is addressing comments on the Draft PER and preparing the Final PER.	Design $1,191,000 Construction $5,279,000	Design $500,863 Construction TBD	$500,863	$379,347	Mar 2022
	WW1AB – WWTF No. 1 Replacement of Aeration Basin Nos. 1 and 2 <u>Capacity funded</u>	This project will be completed in conjunction with WWF1AB. WW1AB is a capacity project providing additional treatment capacity for the project.	Design $117,000 Construction $1,920,000	Design TBD Construction TBD	$0	$0	
11	WARB34- Water Well No. 34 Rehabilitation	The Consultant prepared their final report concerning the inspection of the well components and the video of the well shaft and submitted it on March 8, 2019. SJRA will be performing in-house for the rehabilitation of the water well in accordance to the inspection findings.	Design $0 Construction $300,000	Design $24,240 Construction $29,115	$53,355	$49,301	Jan 2020

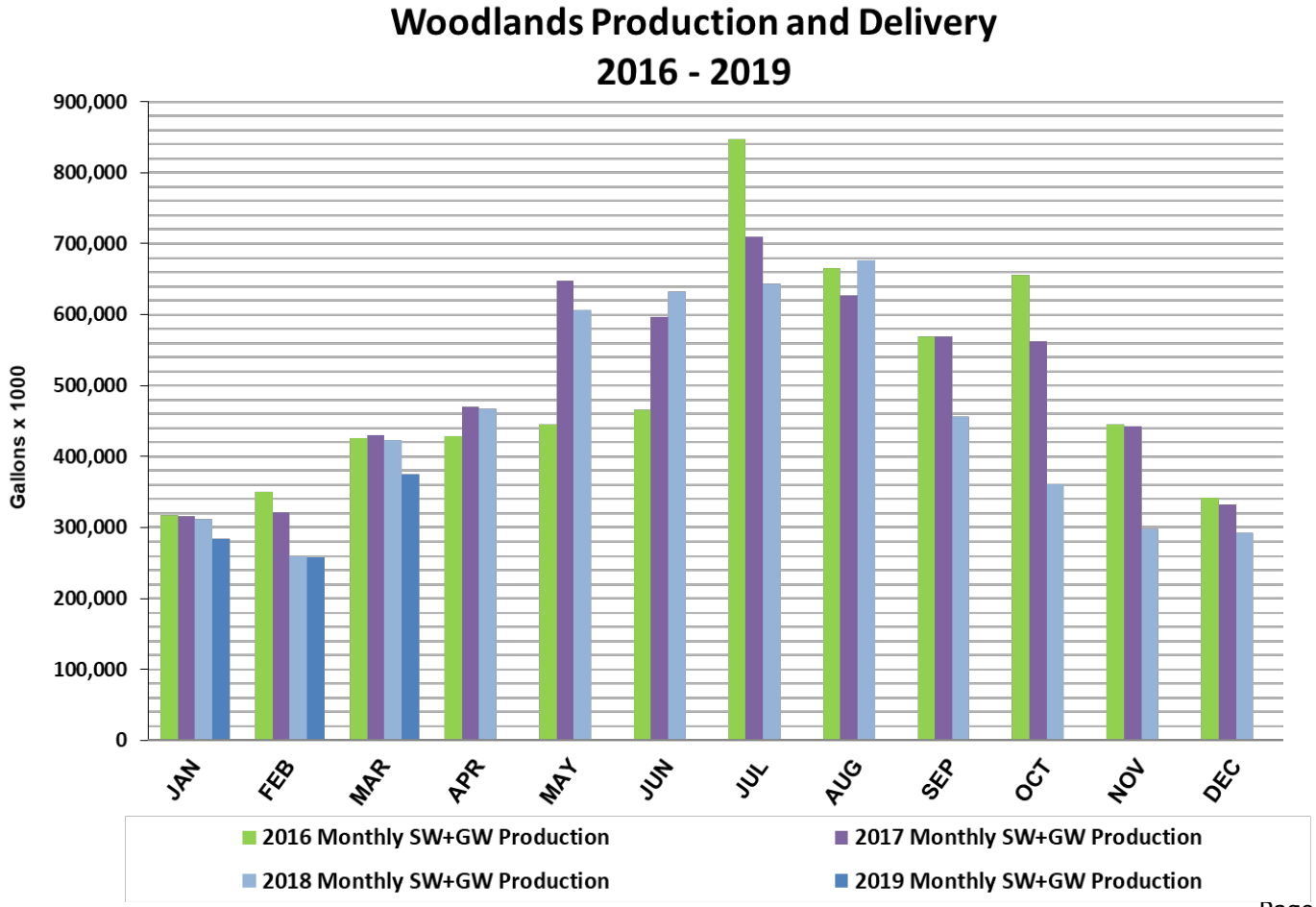
Item	Project Description	Project Highlights	Budget	Contract Amount	Total Contract Amount to Date *	Invoiced to Date	Estimated Completion Date
12	WA17SI – Water System Security Improvements	This project will enhance security for the Woodlands Division water facilities. Work at the water facilities is on-going and should be completed by Spring 2019.	Design $0 Construction $673,000	Design $0 Construction $673,000	$673,000	$593,704	Mar 2019
13	WWSSES – Sanitary Sewer Transmission Assessment and Renewal (SSTAR) Program – Phase I Project	Phase I project consists of planning-level engineering to identify and investigate areas of excessive infiltration and inflow in the wastewater collection system, while conducting a condition assessment. The consultant completed field investigation to verify locations for flow monitoring equipment in January 2019. The consultant completed installation of rain gauges and flow monitoring equipment in February 2019. Flow and rainfall data collection started March 1, 2019. A condition assessment of lift stations will be conducted starting the fourth week of April 2019.	Planning $1,510,000	Planning $1,758,675	$1,758,675	$150,156	Aug 2020
14	WW2MCC - Wastewater Treatment Facility No. 2 Plant Process Water (PPW) Motor Control Center (MCC) Replacement	This project includes the engineering services for the final design and procurement assistance for WWTF No. 2 PPW MCC replacement. The 100% design package is due on April 5, 2019.	Design $64,000 Construction $322,000	Design $52,151 Construction TBD	$52,151	$43,642	Mar 2020

Item	Project Description	Project Highlights	Budget	Contract Amount	Total Contract Amount to Date *	Invoiced to Date	Estimated Completion Date
15	WA4GT2 - Water Plant No. 4 Ground Storage Tank No. 2 Capacity Funded	This project is for the construction of a second ground storage tank at Water Plant No. 4. The 90% design submittal workshop was held on March 15, 2019. The 100% design submittal is due on May 1, 2019.	Design $620,000 Construction $3,413,000	Design $244,436 Construction TBD	$244,436	$62,578	Dec 2020
16	WW19LS – Lift Station No. 13 Rehabilitation	Notice to Proceed for preliminary design was given on December 5, 2018. A kickoff meeting was held on December 8, 2018. Consultant provided the final PER on February 14, 2019. SJRA has negotiated with the consultant for the final design contract, which will be presented to the SJRA Board in April 2019.	Design $266,000 Construction $1,460,000	Design $74,633 Construction TBD	$74,633	$73,861	Sep 2020
17	WA19WR – Rehabilitation of Water Well Nos. 25 and 31	This project was designed in-house by SJRA to rehabilitate two water wells. This project will not increase the capacity of the wells, but repair and replace worn or damaged components. Also, the well pump assemblies will be lowered by 100 feet at both locations. The construction contract for Weisinger Incorporated was approved at the SJRA Board of Directors meeting on February 28, 2019. Notice to Proceed to start construction was set for March 25, 2019.	Design $20,000 Construction $440,000	Design $75,987 Construction $436,127	$512,114	$41,250	Feb 2020

* Note: Total Contract Amount to Date also includes costs of public advertisement for construction bids/proposals.

Project is complete and no further invoices are anticipated.


Woodlands Production, Delivery and Rainfall
March 2019
Production and Delivery (x 1000 gal)
Rainfall (inches)
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
5.00
4.00
3.00
2.00
1.00
0.00
0.05
0.01
0.05
0.01
0.52
0.02
0.08
FRI-1
SAT-2 O
SUN-3 E
MON-4
TUE-5
WED-6 O
THU-7 E
FRI-8
SAT-9 O
SUN-10 E
MON-11
TUE-12
WED-13 O
THU-14 E
FRI-15
SAT-16 O
SUN-17 E
MON-18
TUE-19
WED-20 O
THU-21 E
FRI-22
SAT-23 O
SUN-24 E
MON-25
TUE-26
WED-27 O
THU-28 E
FRI-29
SAT-30 O
SUN-31 E
March - SW Delivery
March - GW Production
March - Rainfall


Woodlands Production and Delivery
2016 - 2019
Gallons x 1000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
2016 Monthly SW+GW Production
2017 Monthly SW+GW Production
2018 Monthly SW+GW Production
2019 Monthly SW+GW Production

SJRA SANITARY SEWER TRANSMISSION ASSESSMENT & RENEWAL (SSTAR) PROGRAM

MARCH 2019

ABOUT THE **SSTAR PROGRAM**

The SSTAR Program is a community-wide, comprehensive assessment of the aging wastewater collection system in The Woodlands. The SSTAR Program is being conducted in two steps. The first step uses flow meters installed in pipes and rainfall monitoring to identify and quantify inflow and infiltration (I&I) in the system. The second step is a visual condition assessment of the wholesale system to assist with prioritizing rehabilitation projects for pipes, manholes, and pump stations by determining when rehabilitation is needed. These two steps will assist in prioritizing areas for further inspection and rehabilitation, and ultimately repairing those areas to improve the Woodlands system. By maintaining the system before it fails, there will be a reduced chance for sewage overflows into homes, businesses, and the environment.

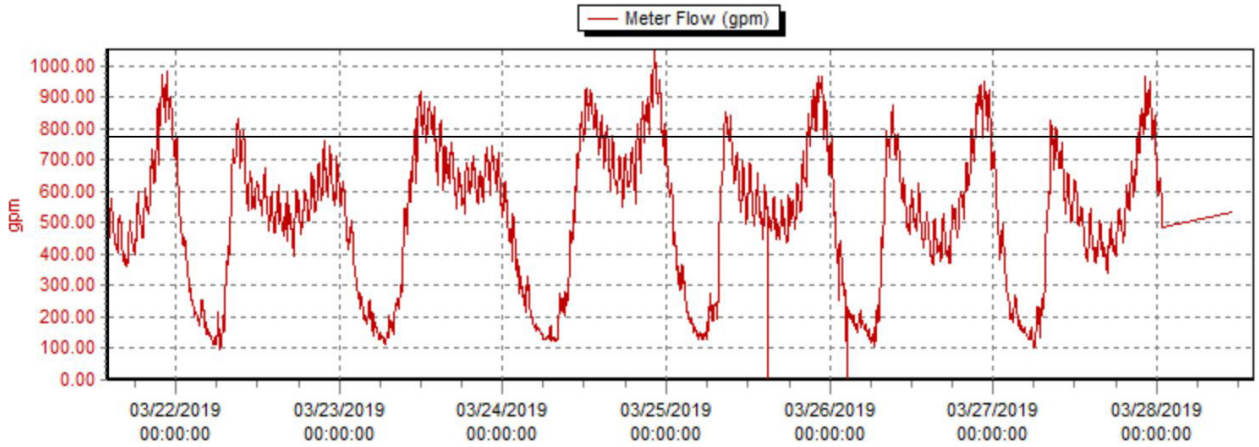
PROJECT UPDATE **MARCH 2019**

SJRA, its consultant, and field crews have completed installation of 61 out of 63 temporary flow meters in the Woodlands sewer system. The remaining two flow meters will be installed along the Bear Branch Gravity Main in Spring 2019.

61 flow meters installed

The data collection process began on March 1, and will continue for a minimum of six months. Although nearly all flow meters have been installed, field crews will be performing routine maintenance over the next six months, so field crews may be seen opening manholes to check, maintain, and calibrate flow meters. During the month of April, SJRA staff and field crews will perform inspections at lift stations throughout The Woodlands.

Below is an example of the information gathered from one flowmeter to assist in determining which areas may have excessive I&I. This information will be collected over the next six months and collectively reviewed along with the condition assessment data to prioritize future rehabilitation projects.



Example of data collected from one flow meter

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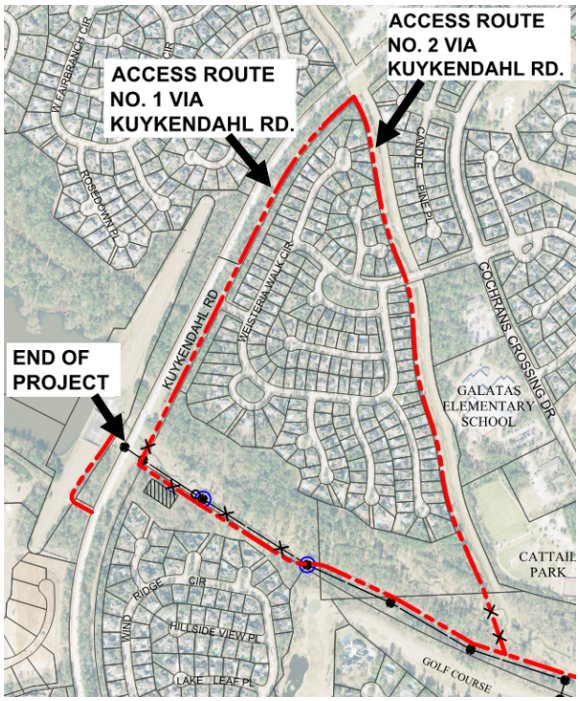
SJRA REHABILITATION OF BEAR BRANCH GRAVITY MAIN PROJECT

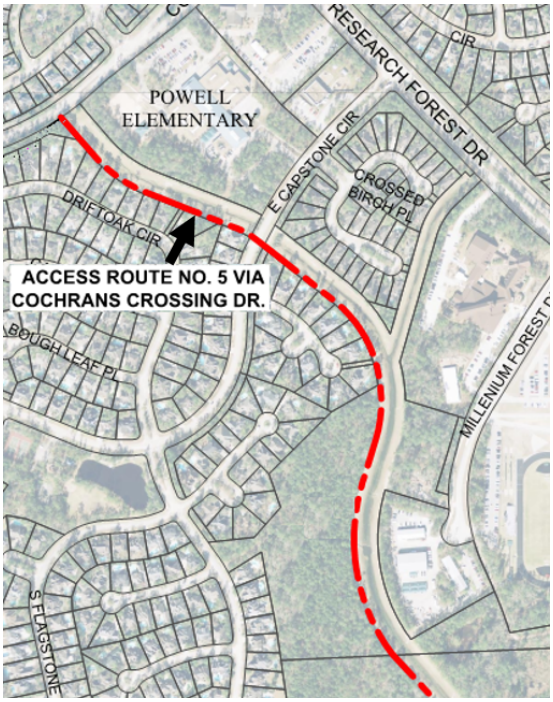
MARCH 2019

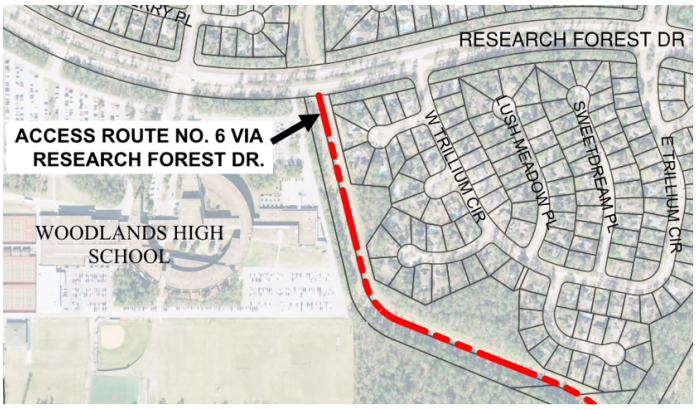
PROJECT UPDATE **MARCH 2019**

The project is currently in final design, with design expected to be completed in the next two months. At the same time, SJRA has been coordinating with the MUDs, The Woodlands Township, Howard Hughes Corporation, and Montgomery County regarding access easements as shown below. Coordination with CISD will be conducted once the access easements are finalized to ensure they are aware of the construction.

The project is expected to advertise for construction in mid-2019, with construction anticipated to start after August 2019 and end late-2020. During construction, temporary access roads will be established, construction vehicles and heavy machinery will be present, but should not disrupt traffic patterns.







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