



Hudson Bayou Condition Report for 2020

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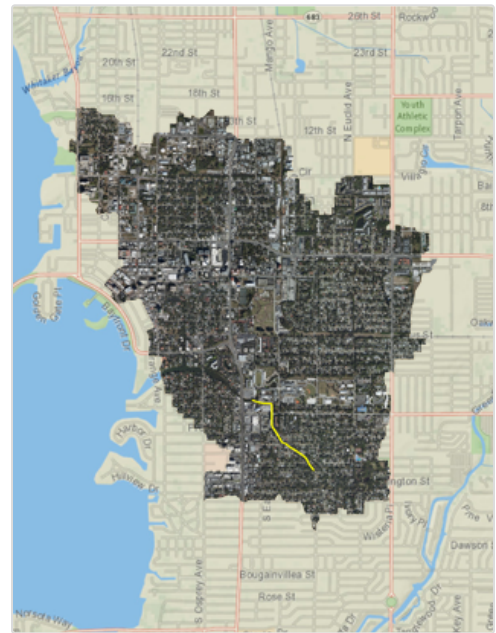
PASS

Chl-a
N
P
DO

4 out of 4 indicators were rated as **PASS.**

All four indicators must pass for the creek to be rated as **PASS.**

Hudson Bayou



Size: 2,406 acres

Location: North Sarasota County

Discharges into: Sarasota Bay

The Hudson Bayou Basin is entirely within the bounds of the City of Sarasota. Its surface water system has undergone significant alteration over the past century. The Sarasota County 1847 General Land Office Survey does not confirm Hudson Bayou but does show a few inland waterways. The 1959 USDA NRCS Soil Survey Map shows that Hudson Bayou extended about 1 mile inland from the bay through somewhat poorly drained soil associated with flatwoods. The survey also shows an area of well-drained soil likely consisting of scrub land north of the bayou, which continues north along the coast. *For basin details see: **Sarasota Bay Water Quality Management Plan (2012)***

Water Chemistry Ratings | Freshwater Portion of the Creek

Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of nitrogen, phosphorus, and chlorophyll *a*, and a minimum allowable concentration of dissolved oxygen in these streams.

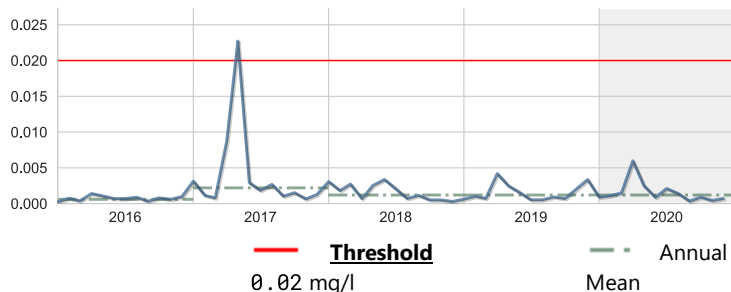


Chlorophyll a

Score: Pass

Units: mg/l	Year 2020	Historical period of record
High	0.0339	0.1568
Mean	0.0012	0.0012
Low	0.0003	0.0002
No. of Samples	24	593

Five-year Rolling Average

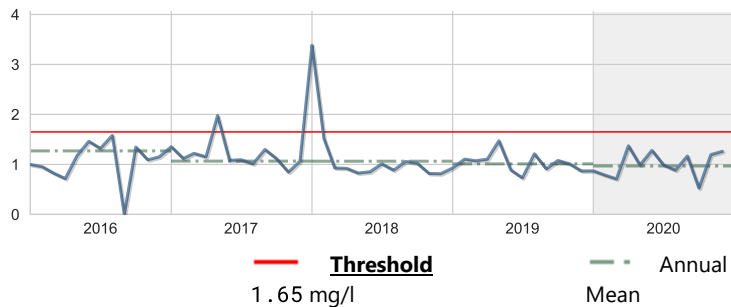


Nitrogen, Total

Score: Pass

Units: mg/l	Year 2020	Historical period of record
High	2.02	17.52
Mean	0.9689	0.909
Low	0.492	0.0018
No. of Samples	24	496

Five-year Rolling Average



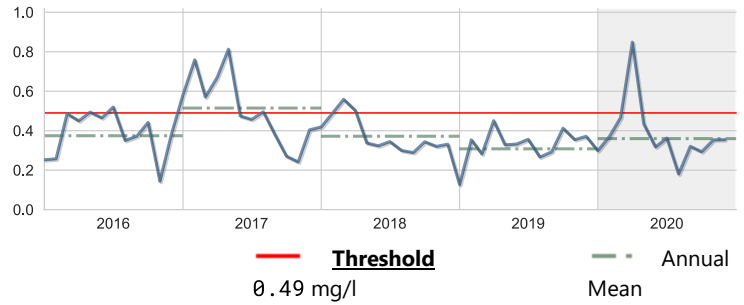


Phosphorus, Total

Score: Pass

Units: mg/l	Year 2020	Historical period of record
High	1.40	4.05
Mean	0.3598	0.433
Low	0.148	0.047
No. of Samples	24	567

Five-year Rolling Average



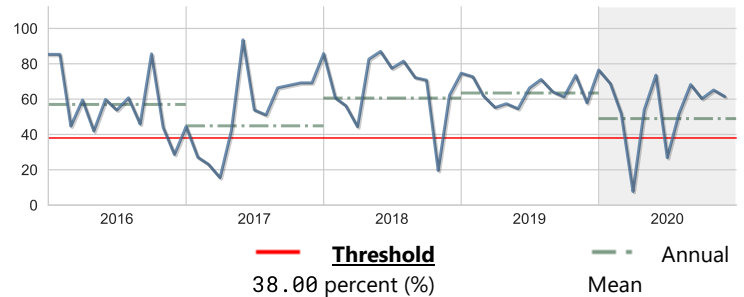
Dissolved Oxygen Saturation

Note: Low DO saturation also may be naturally influenced by inflows from nearby wetlands or groundwater sources.

Score: Pass

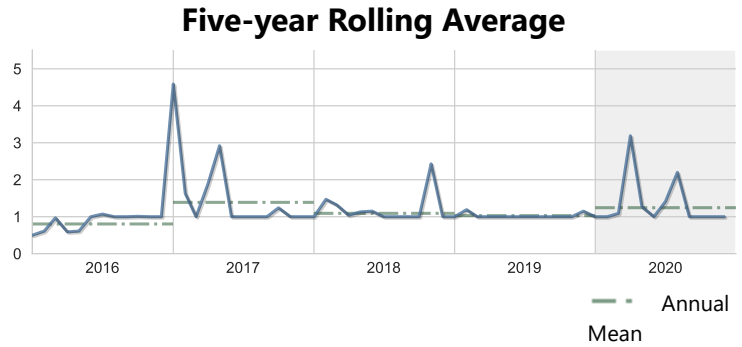
Units: percent (%)	Year 2020	Historical period of record
High	94.6874	144.70
Mean	48.96	52.96
Low	1.1583	1.1583
No. of Samples	24	553

Five-year Rolling Average



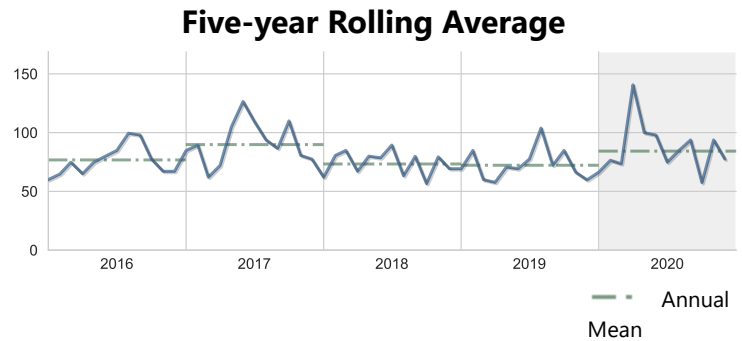
BOD, Biochemical oxygen demand

Units: mg/l	Year 2020	Historical period of record
High	10.20	13.10
Mean	1.24	1.01
Low	1.00	0.50
No. of Samples	24	547



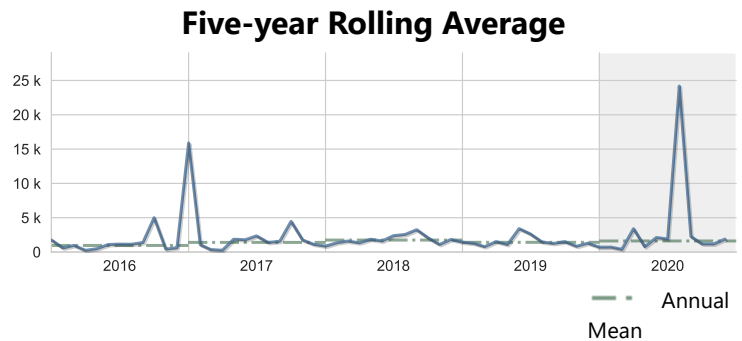
Color

Units: PCU	Year 2020	Historical period of record
High	220.00	400.00
Mean	84.25	72.52
Low	55.00	20.00
No. of Samples	24	570



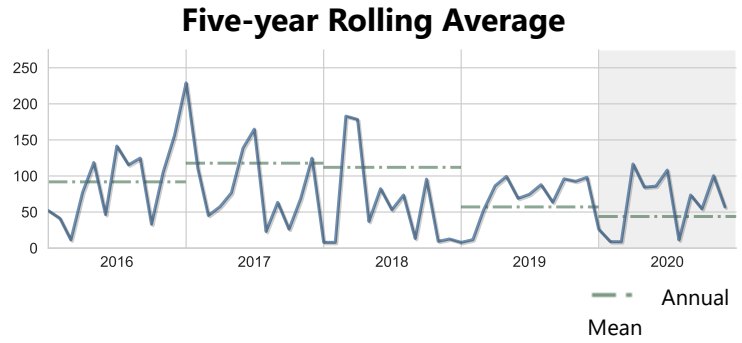
Escherichia coli

Units: cfu/100ml	Year 2020	Historical period of record
High	24196.00	24196.00
Mean	1612.56	1290.01
Low	97.00	41.00
No. of Samples	24	226



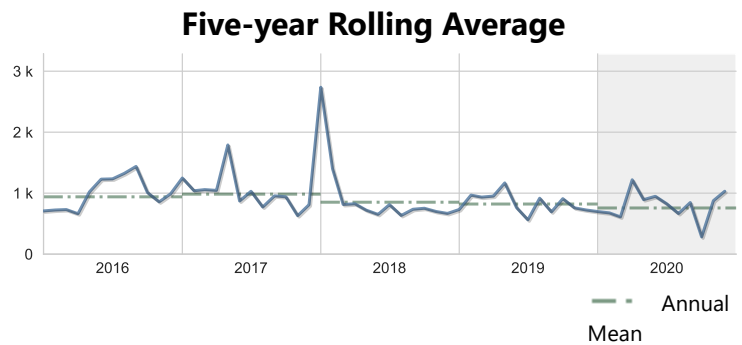
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2020	Historical period of record
High	267.00	650.00
Mean	43.8	50.18
Low	8.00	0.008
No. of Samples	24	591



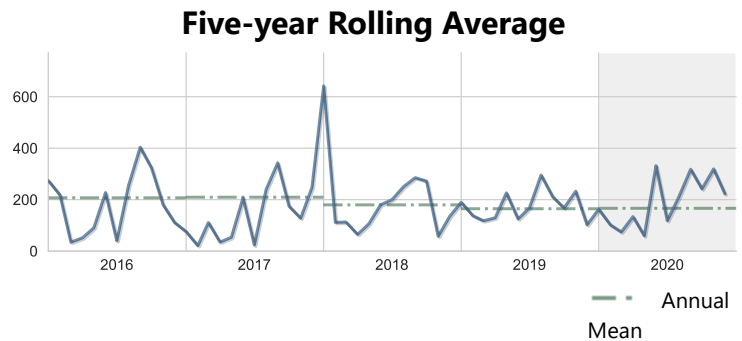
Nitrogen, Kjeldahl

Units: ug/l	Year 2020	Historical period of record
High	1900.00	13800.00
Mean	757.04	779.62
Low	250.00	0.00
No. of Samples	24	566



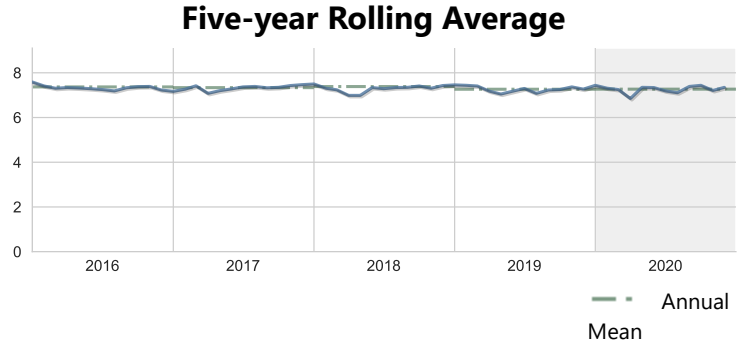
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2020	Historical period of record
High	435.00	3720.00
Mean	166.4	119.73
Low	21.00	4.00
No. of Samples	24	566



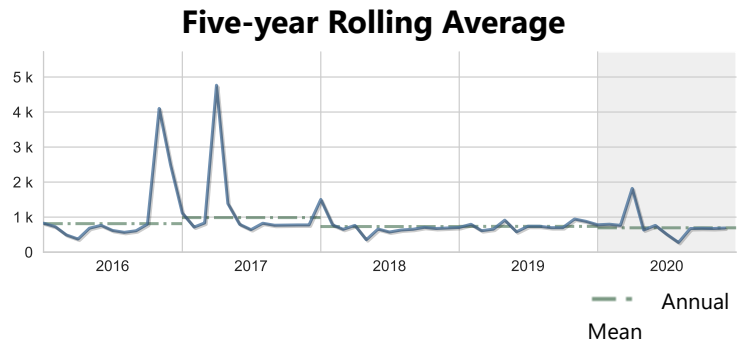
pH

Units: None	Year 2020	Historical period of record
High	7.64	9.10
Mean	7.27	7.4
Low	6.70	6.20
No. of Samples	24	615



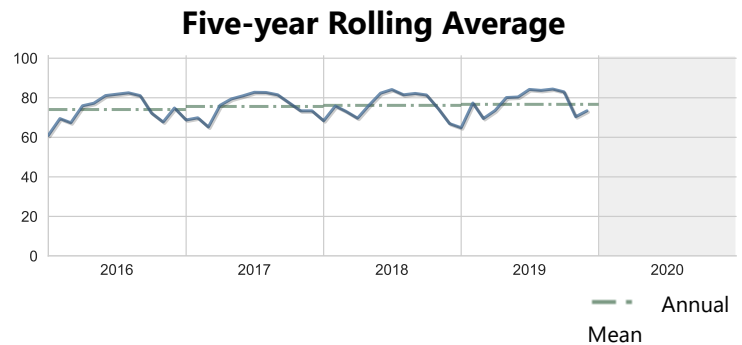
Specific conductance

Units: umho	Year 2020	Historical period of record
High	5897.49	54000.00
Mean	694.32	846.33
Low	257.963	0.445
No. of Samples	24	531



Temperature, water

Units: deg F	Year 2020	Historical period of record
High		91.40
Mean		73.64
Low		53.87
No. of Samples	0	508

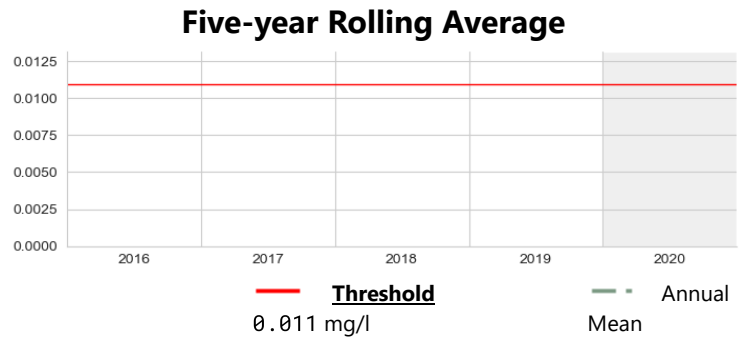


Water Chemistry Ratings | Tidal Portion of the Creek

Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of chlorophyll *a* and a minimum allowable concentration of dissolved oxygen in these streams. Florida has no regulatory thresholds for nitrogen or phosphorus in tidal creeks so trends are used to rate the creeks.

Chlorophyll a

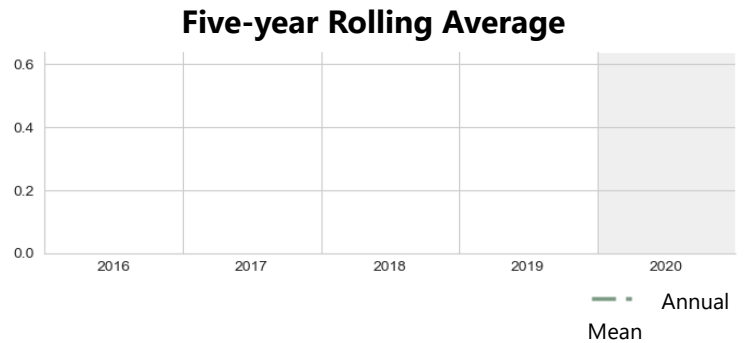
Units: mg/l	Year 2020	Historical period of record
High		0.1
Mean		0.003
Low		0.0003
No. of Samples	0	136



Nitrogen, Total

Score: Pass

Units: mg/l	Year 2020	Historical period of record
High		1.9
Mean		0.8692
Low		0.34
No. of Samples	0	159





Phosphorus, Total

Score: Pass

Units: mg/l	Year 2020	Historical period of record
High		1.3
Mean		0.3192
Low		0.05
No. of Samples	0	171

Five-year Rolling Average

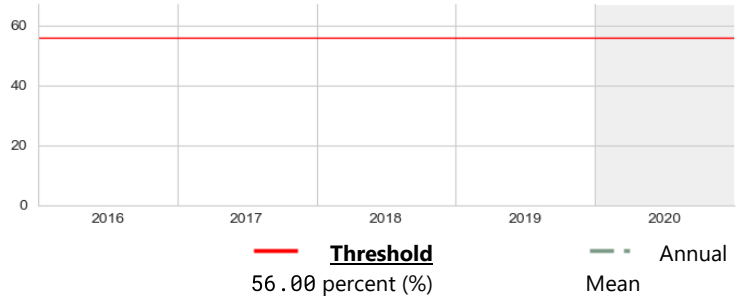


Dissolved Oxygen Saturation

Note: Low DO saturation also may be naturally influenced by inflows from nearby wetlands or groundwater sources

Units: percent (%)	Year 2020	Historical period of record
High		128.7
Mean		42.27
Low		0.70
No. of Samples	0	236

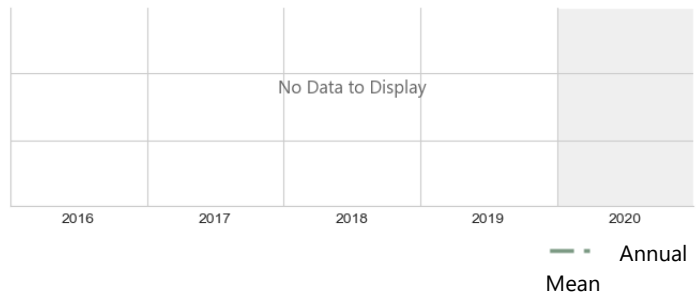
Five-year Rolling Average



BOD, Biochemical oxygen demand

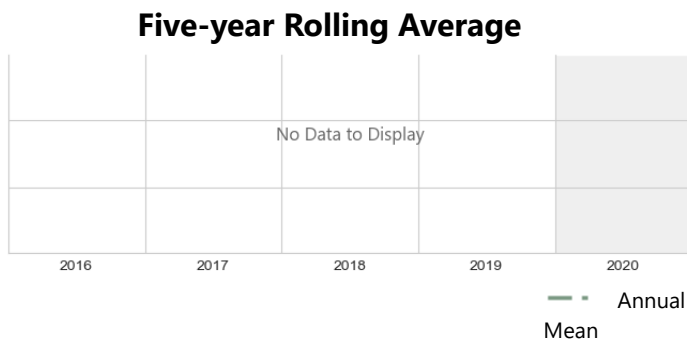
Units: mg/l	Year 2020	Historical period of record
High		5.4
Mean		1.69
Low		0.50
No. of Samples	0	113

Five-year Rolling Average



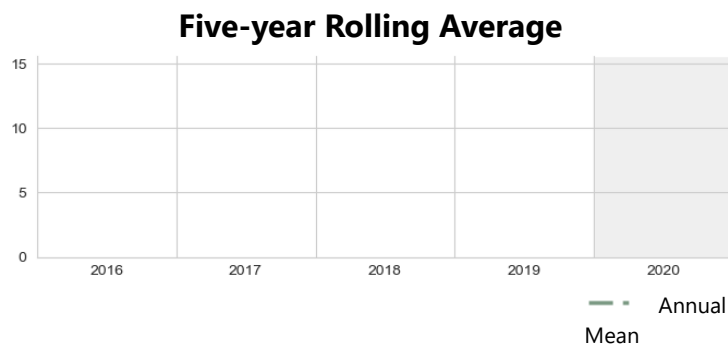
Color

Units: PCU	Year 2020	Historical period of record
High		125.0
Mean		30.85
Low		5.00
No. of Samples	0	234



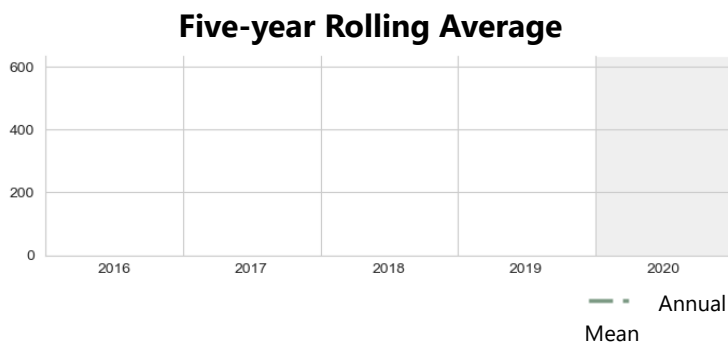
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2020	Historical period of record
High		912.0
Mean		19.94
Low		0.00
No. of Samples	0	219



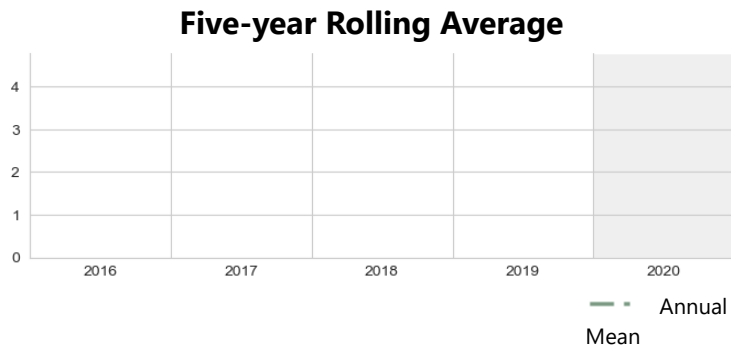
Nitrogen, Kjeldahl

Units: ug/l	Year 2020	Historical period of record
High		1,946.0
Mean		716.31
Low		160.00
No. of Samples	0	217



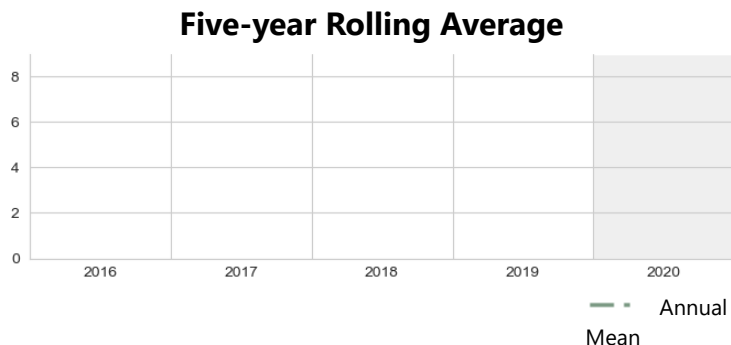
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2020	Historical period of record
High		656.0
Mean		75.36
Low		0.00
No. of Samples	0	179



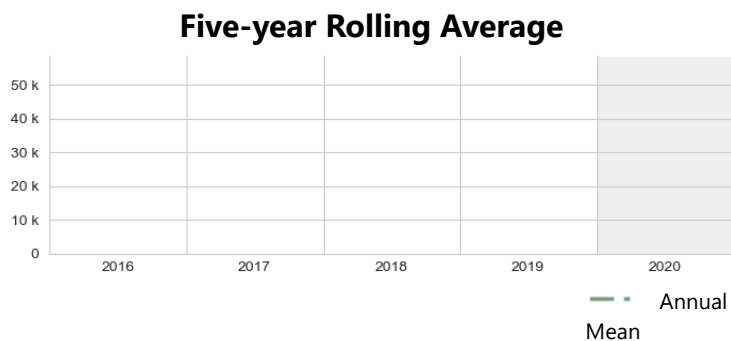
pH

Units: None	Year 2020	Historical period of record
High		8.4
Mean		7.65
Low		6.38
No. of Samples	0	228



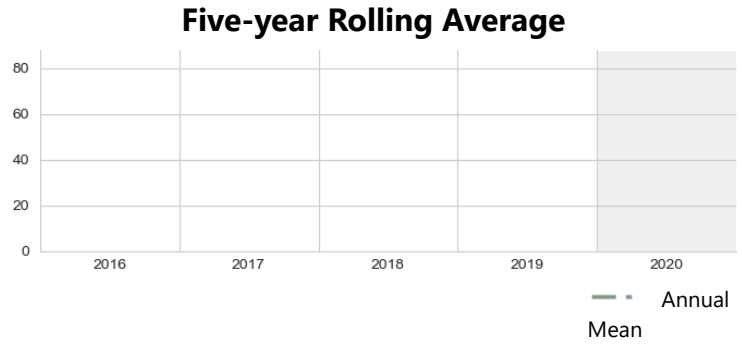
Specific conductance

Units: umho	Year 2020	Historical period of record
High		53,000.0
Mean		32678.21
Low		46.582
No. of Samples	0	309



Temperature, water

Units: deg F	Year 2020	Historical period of record
High		94.2
Mean		75.28
Low		51.80
No. of Samples	0	234



Impervious Features

Rain that falls on land that is in a natural state is absorbed and filtered by soils and vegetation as it makes its way into underground aquifers. However, in developed areas, "impervious surfaces" impede this process and contribute to polluted urban runoff entering surface waters. These surfaces include human infrastructure like roads, sidewalks, driveways and parking lots that are covered by impenetrable materials such as asphalt, concrete, brick and stone, as well as buildings and other permanent structures. Soils that have been disturbed and compacted by urban development are often impervious as well.

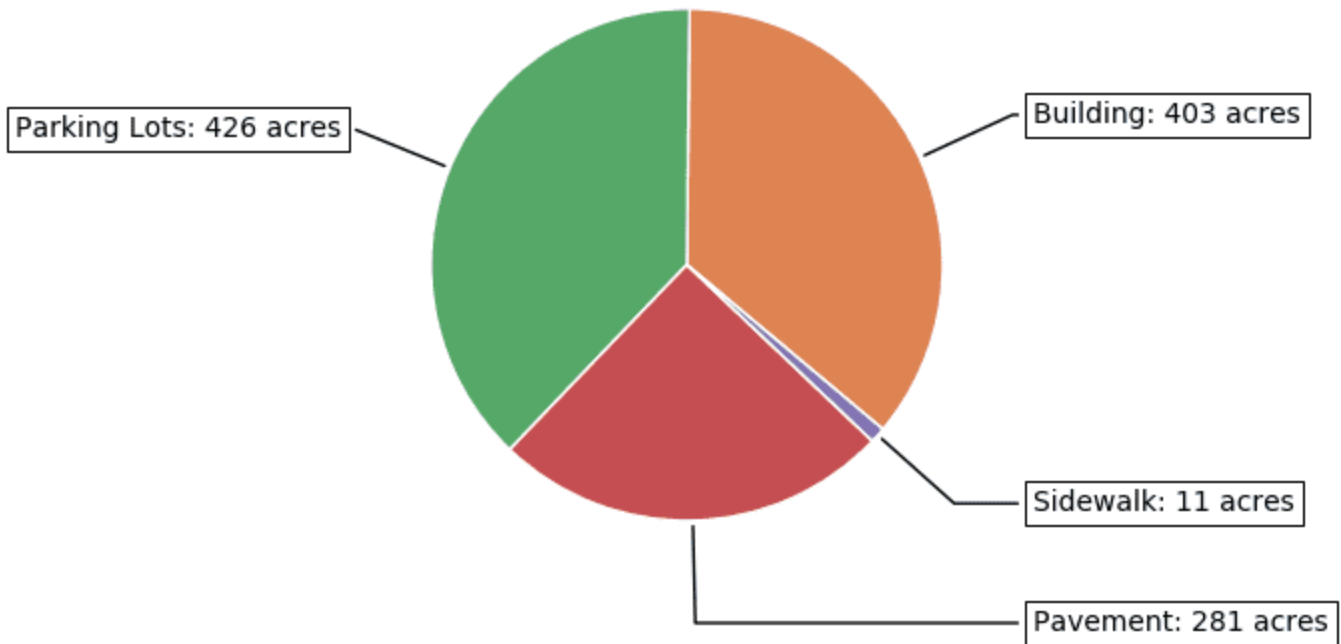


47% of the land area within the **Hudson Bayou Basin** is covered by impervious

surfaces

2014 Impervious Surface Coverage by Type

in acres, within the Hudson Bayou Basin



Land Use / Land Cover

Land use within a creek's watershed has a major effect on its water quality. In general, less development means better water quality. Land Cover/Land Use classifications categorize land in terms of its observed physical surface characteristics (e.g. upland or wetland), and also reflect the types of activity that are taking place on it (agriculture, urban/built-up, utilities, etc.). Florida uses as its standard a set of statewide classifications which were developed by the Florida Department of Transportation.

Acreeage and Percentage within each Land Use / Land Cover Category for Hudson Bayou Basin

2020 Creek Conditions Report for Hudson Bayou

Land Use Classification	1990	1995	1999	2005	2011	2014	2017	Trend
Urban & Built-up	2,224 92.4%	2,244 93.3%	2,243 93.2%	2,260 93.9%	2,260 93.9%	2,249 93.5%	2,260 93.9%	
Upland Forests	16 0.7%	9 0.4%	9 0.4%	0 0%	0 0%	0 0%	0 0%	
Water	24 1%	25 1%	26 1.1%	26 1.1%	27 1.1%	27 1.1%	27 1.1%	
Wetlands	16 0.7%	13 0.5%	13 0.5%	10 0.4%	10 0.4%	10 0.4%	10 0.4%	
Transportation and Utilities	126 5.2%	115 4.8%	115 4.8%	109 4.6%	109 4.6%	120 5%	109 4.5%	

2017 Land Use / Land Cover for Hudson Bayou Basin
as a percentage of land area for this basin

