

Hudson Bayou Condition Report for 2017

CAUTION

Chl-a

N

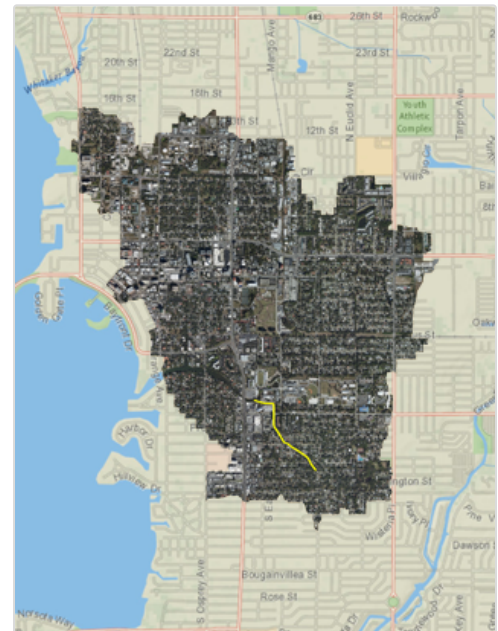
P

DO

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

3 out of 4 indicators were 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.

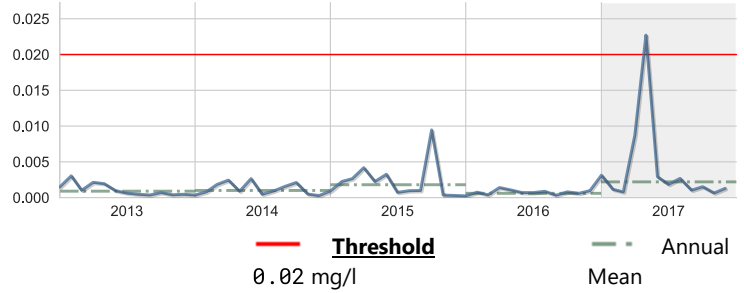


Chlorophyll a

Score: Pass

Units: mg/l	Year 2017	Historical period of record
High	0.102	0.1568
Mean	0.0022	0.0013
Low	0.0003	0.0002
No. of Samples	24	552

Five-year Rolling Average

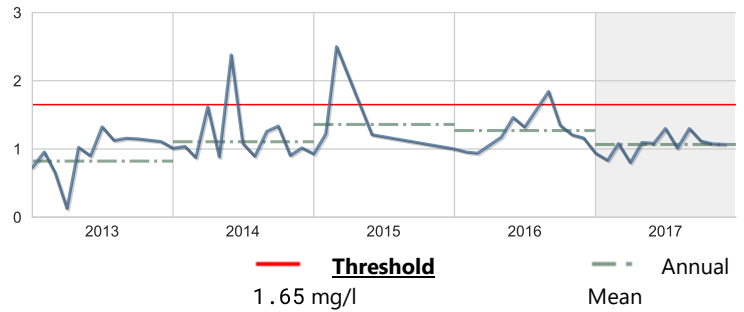


Nitrogen, Total

Score: Pass

Units: mg/l	Year 2017	Historical period of record
High	1.33	3.059
Mean	1.0659	0.9142
Low	0.799	0.054
No. of Samples	17	267

Five-year Rolling Average



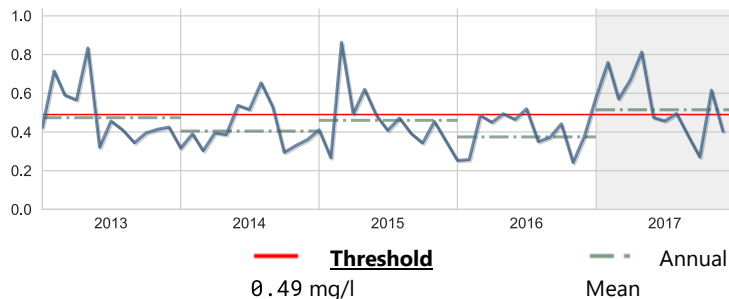


Phosphorus, Total

Score: Caution

Units: mg/l	Year 2017	Historical period of record
High	1.70	4.05
Mean	0.5147	0.4587
Low	0.155	0.132
No. of Samples	23	570

Five-year Rolling Average



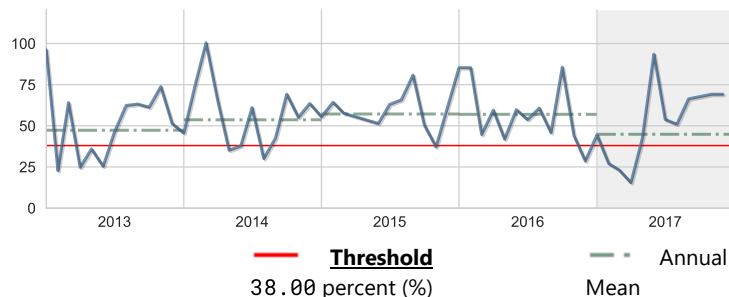
Dissolved Oxygen Saturation

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

Score: Pass

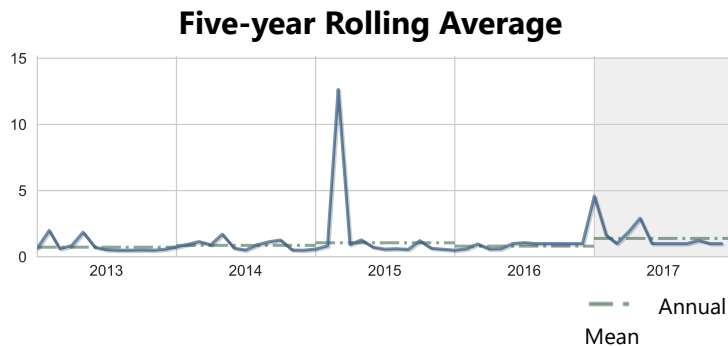
Units: percent (%)	Year 2017	Historical period of record
High	102.90	144.70
Mean	44.87	52.55
Low	3.30	3.30
No. of Samples	22	606

Five-year Rolling Average



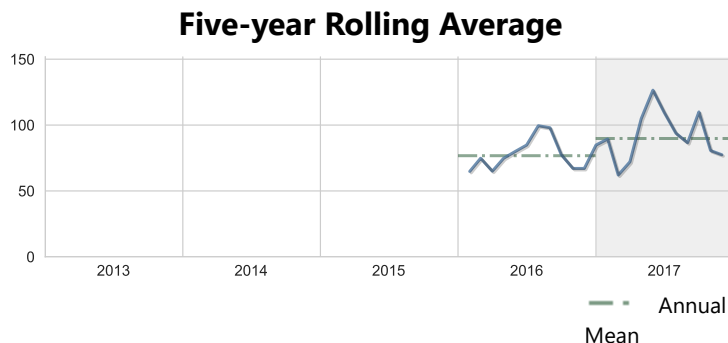
BOD, Biochemical oxygen demand

Units: mg/l	Year 2017	Historical period of record
High	8.51	13.10
Mean	1.39	0.96
Low	1.00	0.50
No. of Samples	24	543



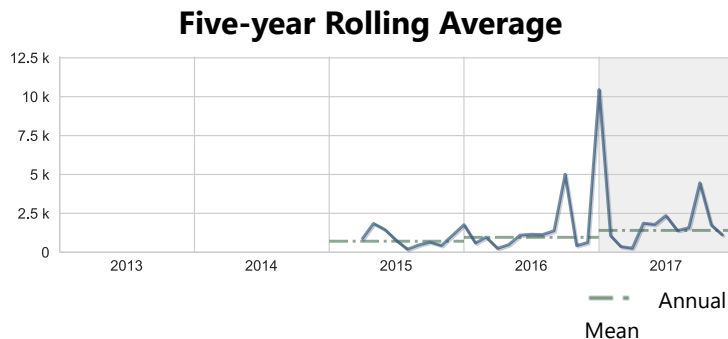
Color

Units: PCU	Year 2017	Historical period of record
High	200.00	200.00
Mean	89.81	74.21
Low	55.00	20.00
No. of Samples	24	56



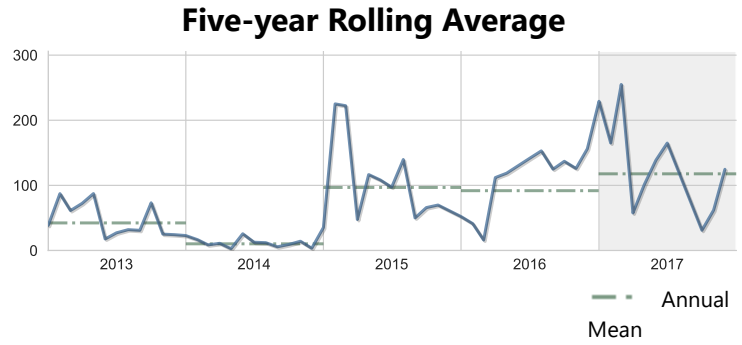
Escherichia coli

Units: cfu/100ml	Year 2017	Historical period of record
High	10462.00	10462.00
Mean	1404.53	963.02
Low	63.00	41.00
No. of Samples	23	77



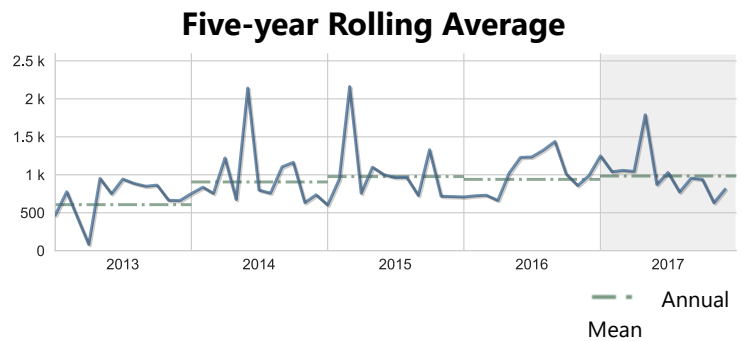
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2017	Historical period of record
High	505.00	650.00
Mean	117.73	54.23
Low	23.00	0.008
No. of Samples	15	572



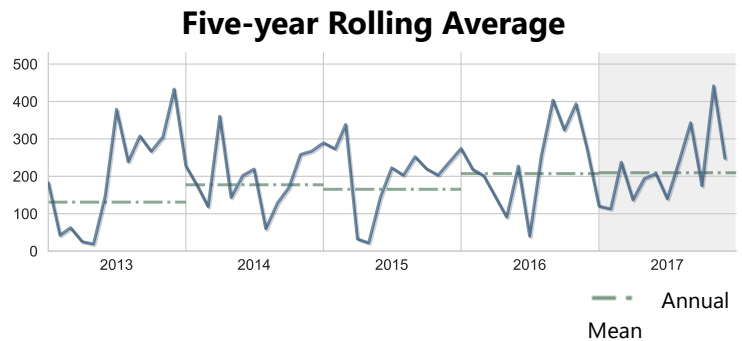
Nitrogen, Kjeldahl

Units: ug/l	Year 2017	Historical period of record
High	3560.00	3560.00
Mean	983.59	758.79
Low	629.00	0.00
No. of Samples	24	571



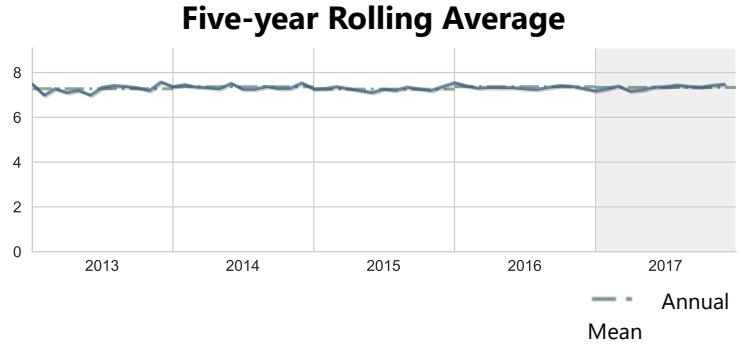
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2017	Historical period of record
High	442.00	681.00
Mean	209.48	120.52
Low	113.00	4.00
No. of Samples	17	559



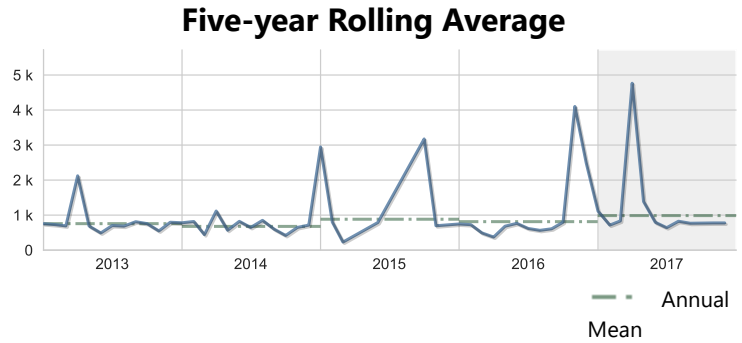
pH

Units: None	Year 2017	Historical period of record
High	7.70	9.10
Mean	7.34	7.44
Low	6.80	6.62
No. of Samples	46	561



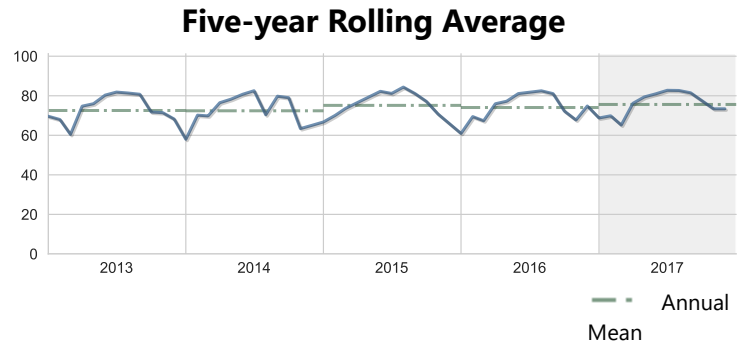
Specific conductance

Units: umho	Year 2017	Historical period of record
High	36693.00	54000.00
Mean	986.09	822.64
Low	361.00	0.445
No. of Samples	22	510



Temperature, water

Units: deg F	Year 2017	Historical period of record
High	82.94	91.40
Mean	75.6	72.97
Low	63.302	53.87
No. of Samples	22	412

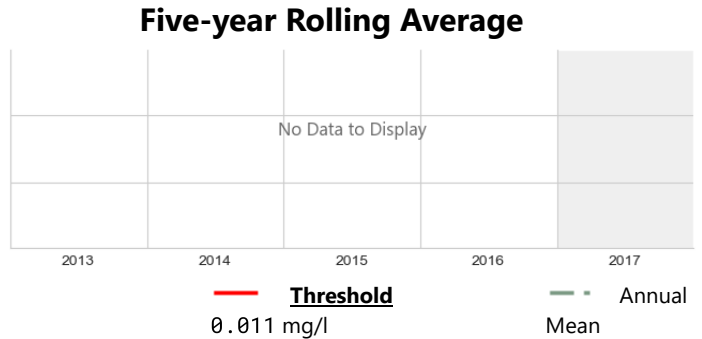


Water Chemistry Ratings | Tidal Portion of the Creek

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.

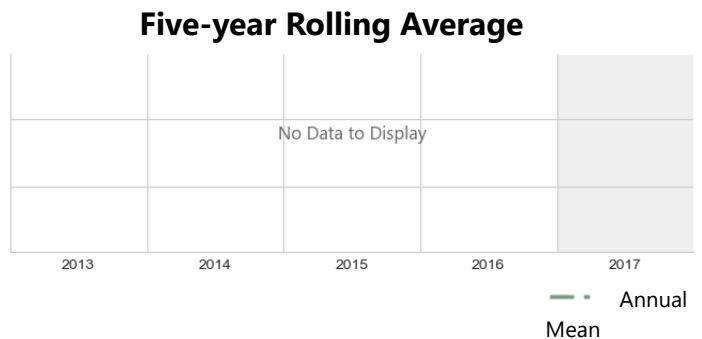
Chlorophyll a

Units: mg/l	Year 2017	Historical period of record
High		0.1
Mean		0.0029
Low		0.0003
No. of Samples	0	157



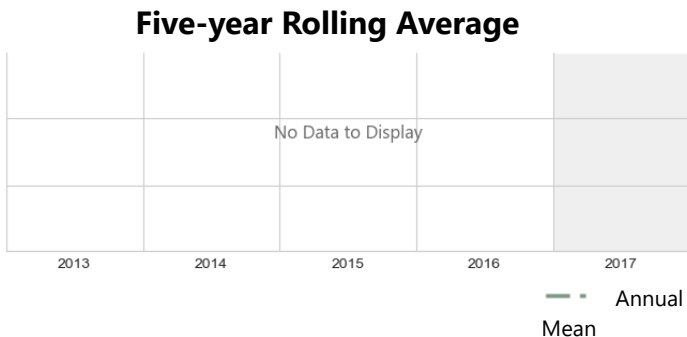
Nitrogen, Total

Units: mg/l	Year 2017	Historical period of record
High		1.9
Mean		0.8558
Low		0.34
No. of Samples	0	129



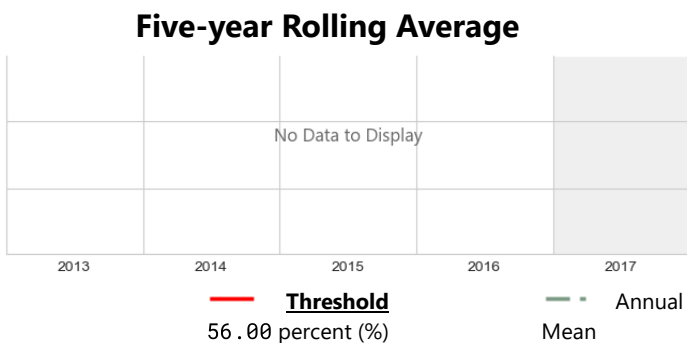
Phosphorus, Total

Units: mg/l	Year 2017	Historical period of record
High		1.3
Mean		0.3484
Low		0.05
No. of Samples	0	197



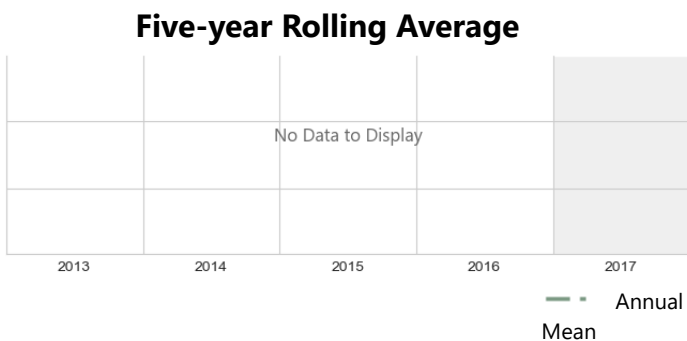
Dissolved Oxygen Saturation

Units: percent (%)	Year 2017	Historical period of record
High		128.7
Mean		38.49
Low		0.70
No. of Samples	0	293



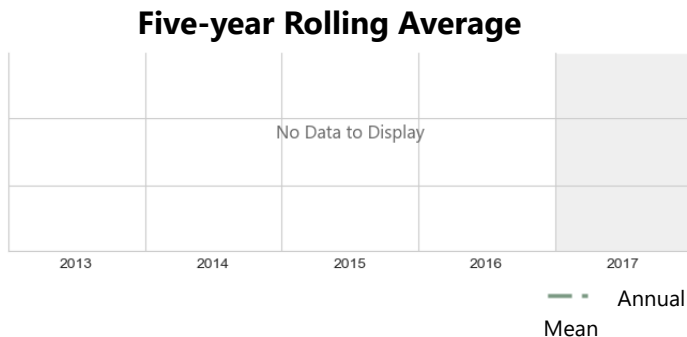
BOD, Biochemical oxygen demand

Units: mg/l	Year 2017	Historical period of record
High		5.4
Mean		1.63
Low		0.50
No. of Samples	0	137



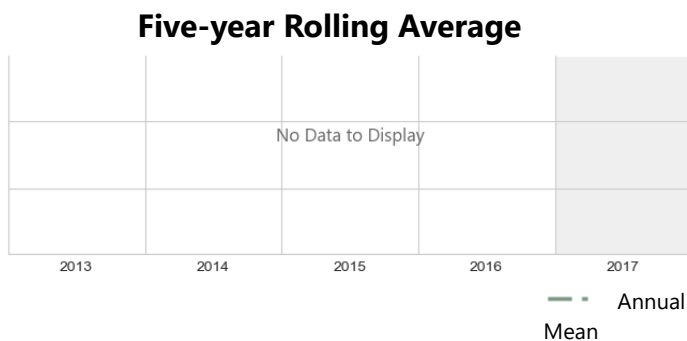
Color

Units: PCU	Year 2017	Historical period of record
High		125.0
Mean		23.7
Low		5.00
No. of Samples	0	121



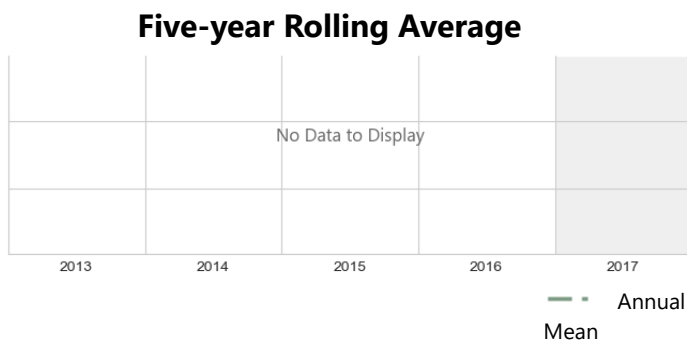
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2017	Historical period of record
High		912.0
Mean		23.48
Low		0.00
No. of Samples	0	244



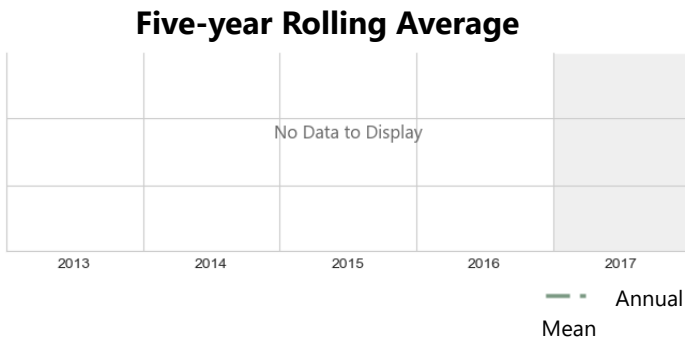
Nitrogen, Kjeldahl

Units: ug/l	Year 2017	Historical period of record
High		1,946.0
Mean		707.74
Low		160.00
No. of Samples	0	243



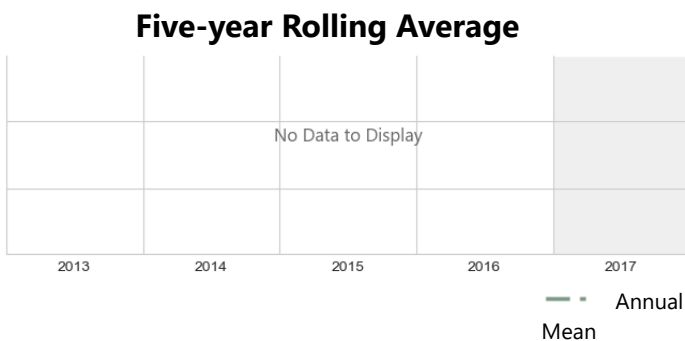
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2017	Historical period of record
High		656.0
Mean		90.66
Low		0.00
No. of Samples	0	205



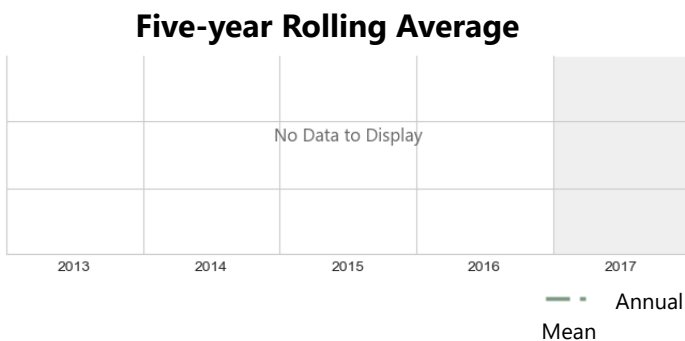
pH

Units: None	Year 2017	Historical period of record
High		8.4
Mean		7.6
Low		6.38
No. of Samples	0	245



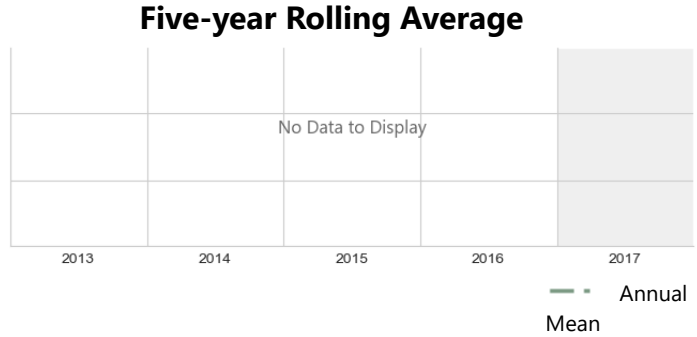
Specific conductance

Units: umho	Year 2017	Historical period of record
High		53,000.0
Mean		30173.85
Low		46.582
No. of Samples	0	326



Temperature, water

Units: deg F	Year 2017	Historical period of record
High		94.2
Mean		75.29
Low		51.80
No. of Samples	0	233



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.

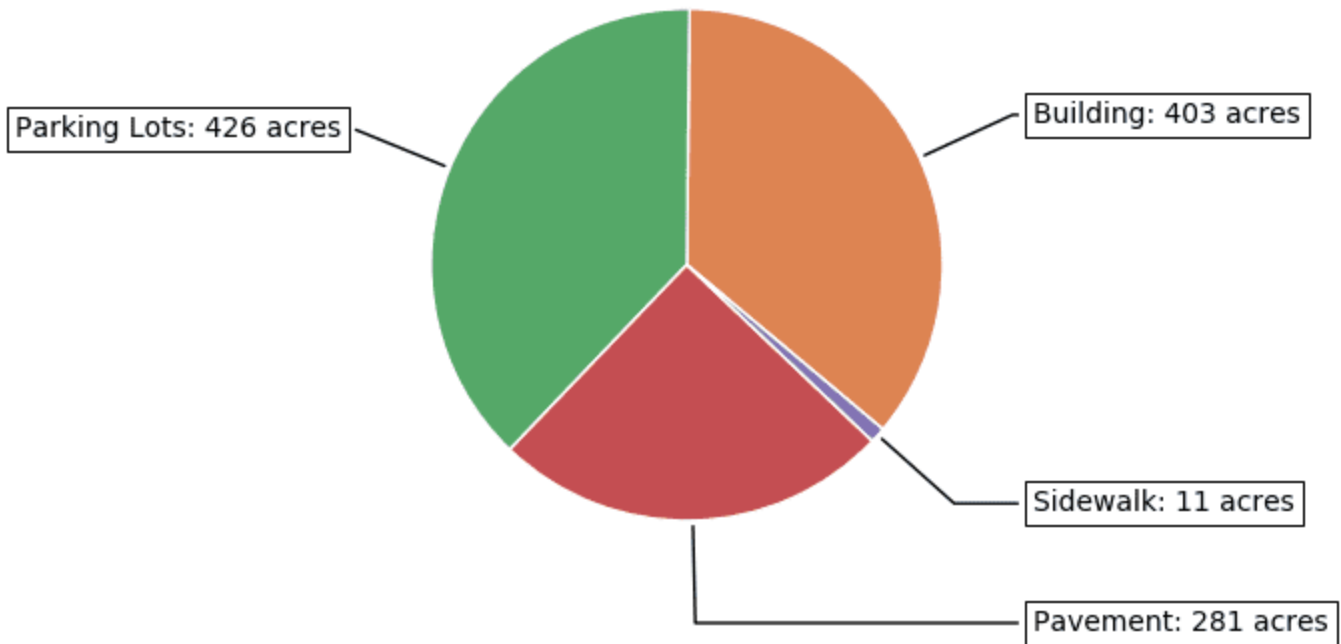


47% of the land area within the **Hudson Bayou Basin** is covered by impervious

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

2017 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

