



Hudson Bayou Condition Report for 2016

✓

PASS

Chl-a

N

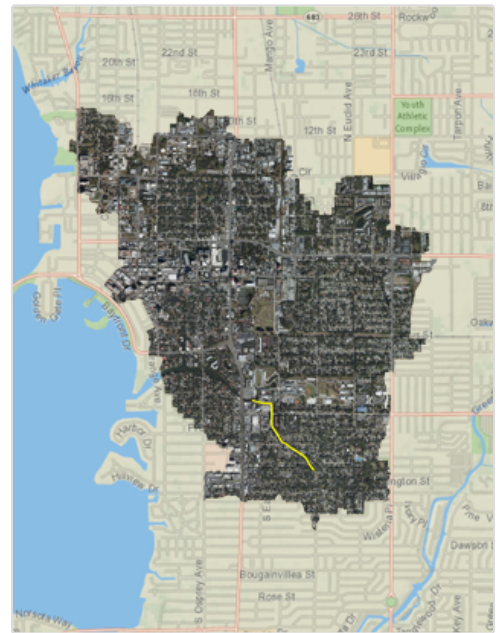
P

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.

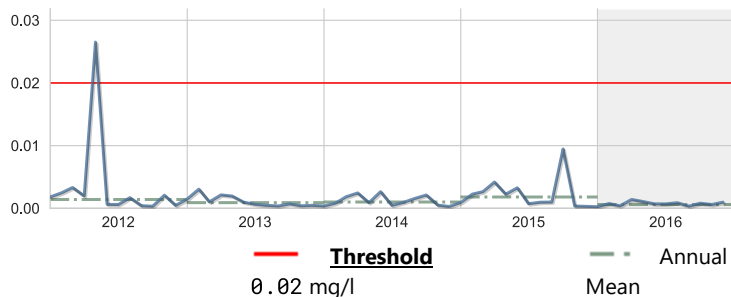


Chlorophyll a

Score: Pass

Units: mg/l	Year 2016	Historical period of record
High	0.0029	0.1568
Mean	0.0006	0.0013
Low	0.0003	0.0002
No. of Samples	26	528

Five-year Rolling Average

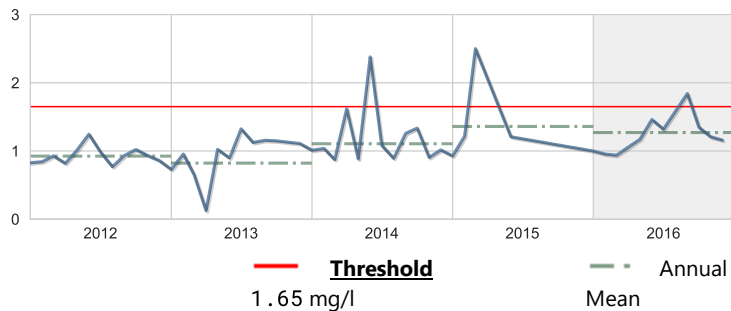


Nitrogen, Total

Score: Pass

Units: mg/l	Year 2016	Historical period of record
High	1.911	3.059
Mean	1.2703	0.9047
Low	0.871	0.054
No. of Samples	19	250

Five-year Rolling Average



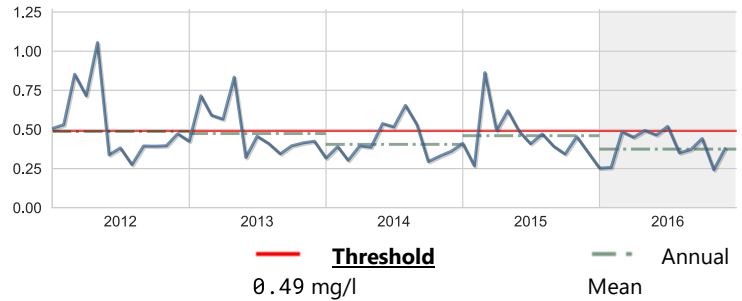
P

Phosphorus, Total

Score: Pass

Units: mg/l	Year 2016	Historical period of record
High	0.803	4.05
Mean	0.3744	0.4565
Low	0.132	0.132
No. of Samples	25	547

Five-year Rolling Average



DO

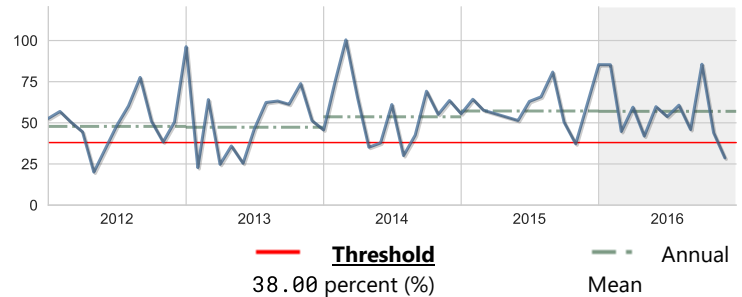
Dissolved Oxygen Saturation

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

Score: Pass

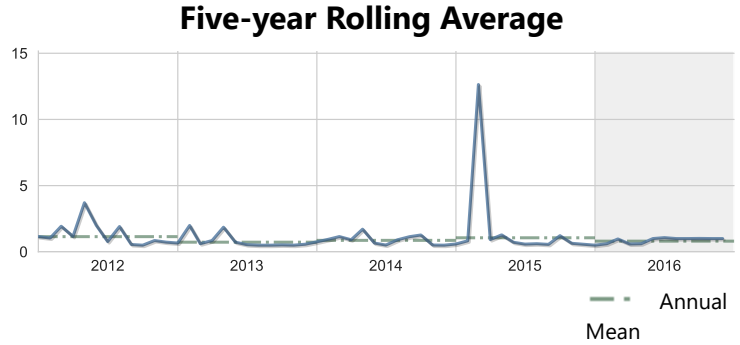
Units: percent (%)	Year 2016	Historical period of record
High	103.10	144.70
Mean	56.99	52.86
Low	9.60	4.20
No. of Samples	26	584

Five-year Rolling Average



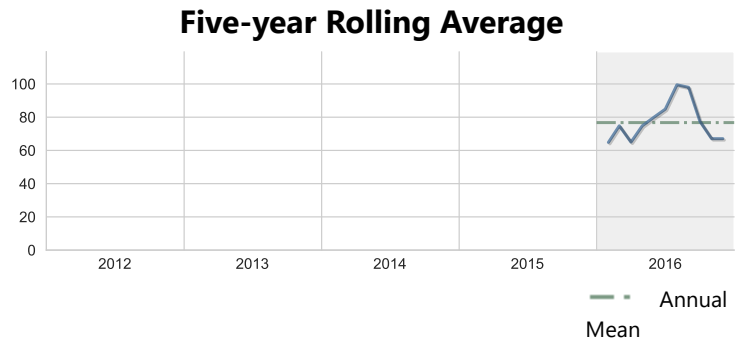
BOD, Biochemical oxygen demand

Units: mg/l	Year 2016	Historical period of record
High	1.57	13.10
Mean	0.8	0.95
Low	0.50	0.50
No. of Samples	26	519



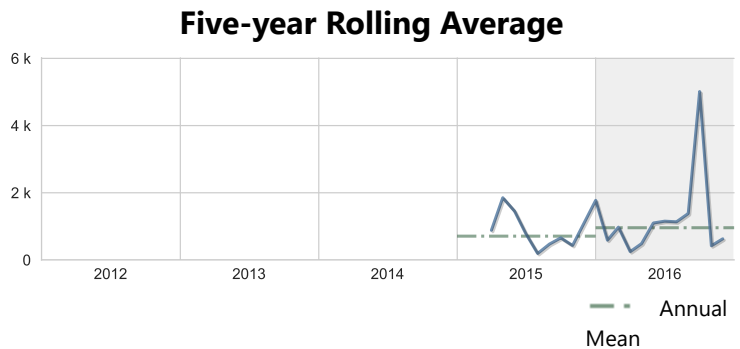
Color

Units: PCU	Year 2016	Historical period of record
High	120.00	120.00
Mean	76.75	64.32
Low	50.00	20.00
No. of Samples	22	32



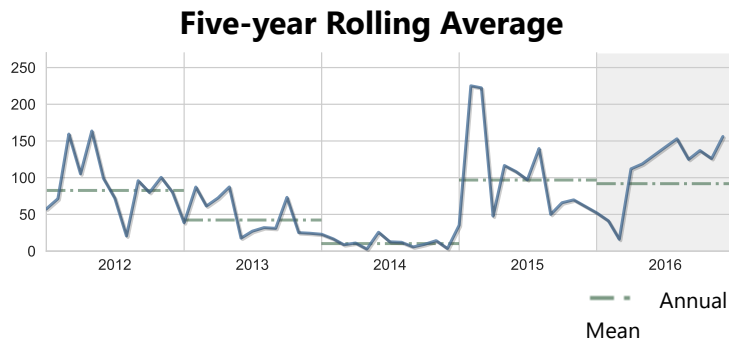
Escherichia coli

Units: cfu/100ml	Year 2016	Historical period of record
High	7701.00	7701.00
Mean	959.28	820.03
Low	122.00	41.00
No. of Samples	26	54



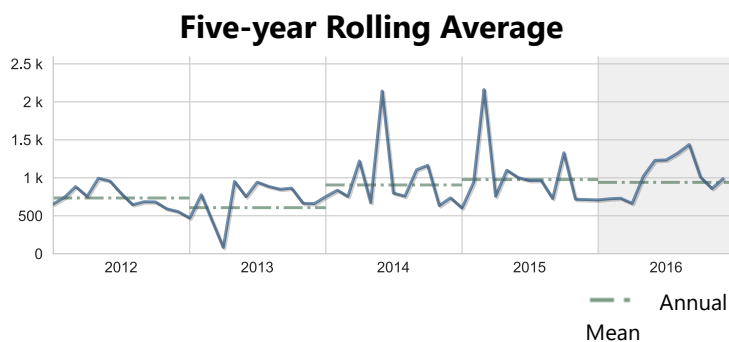
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2016	Historical period of record
High	257.00	650.00
Mean	91.85	53.11
Low	16.00	0.008
No. of Samples	17	557



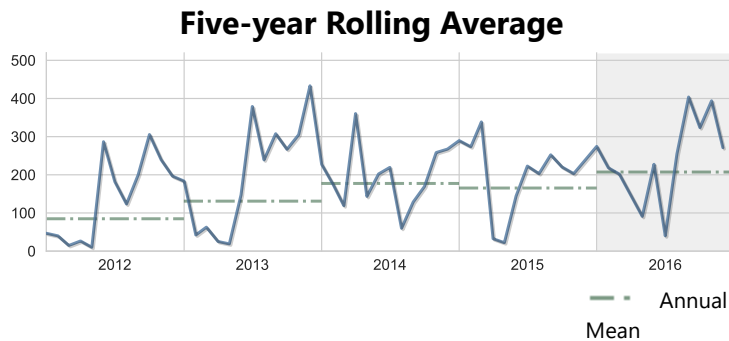
Nitrogen, Kjeldahl

Units: ug/l	Year 2016	Historical period of record
High	1500.00	2610.00
Mean	939.78	750.18
Low	575.00	0.00
No. of Samples	26	547



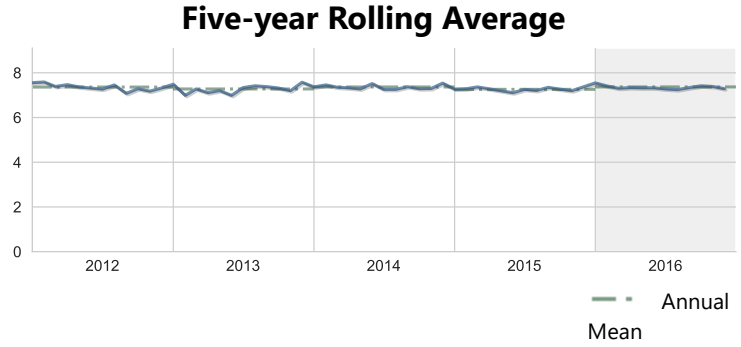
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2016	Historical period of record
High	417.00	681.00
Mean	207.25	118.45
Low	10.00	4.00
No. of Samples	21	542



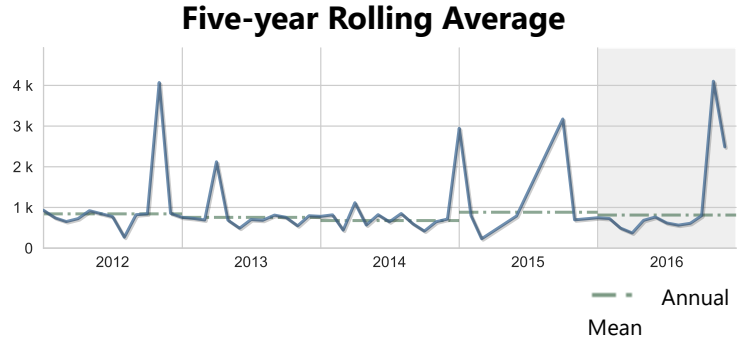
pH

Units: None	Year 2016	Historical period of record
High	7.75	9.10
Mean	7.37	7.45
Low	7.00	6.62
No. of Samples	52	515



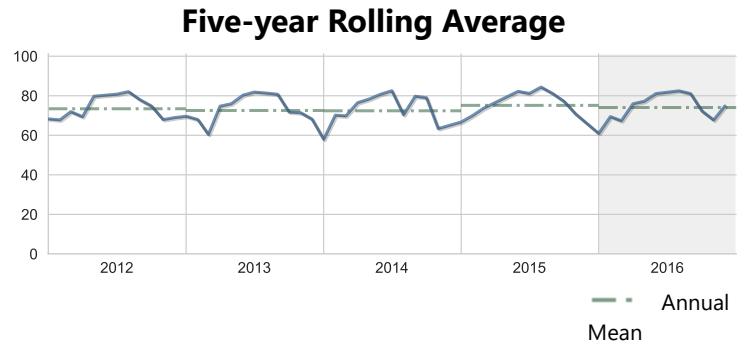
Specific conductance

Units: umho	Year 2016	Historical period of record
High	29024.00	54000.00
Mean	813.32	815.95
Low	145.00	0.445
No. of Samples	26	488



Temperature, water

Units: deg F	Year 2016	Historical period of record
High	83.246	91.40
Mean	74.05	72.83
Low	58.082	53.87
No. of Samples	24	390

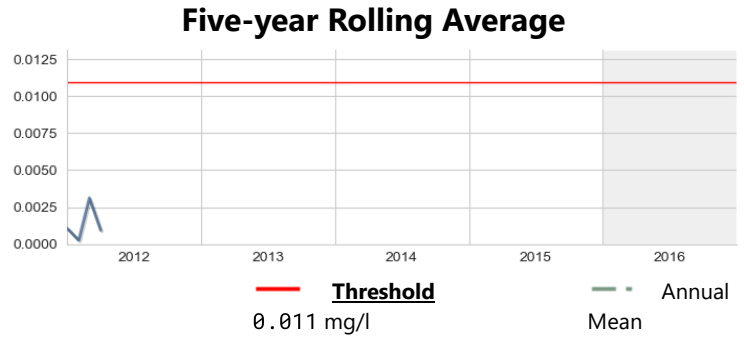


Water Chemistry Ratings | Tidal Portion of the Creek

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.

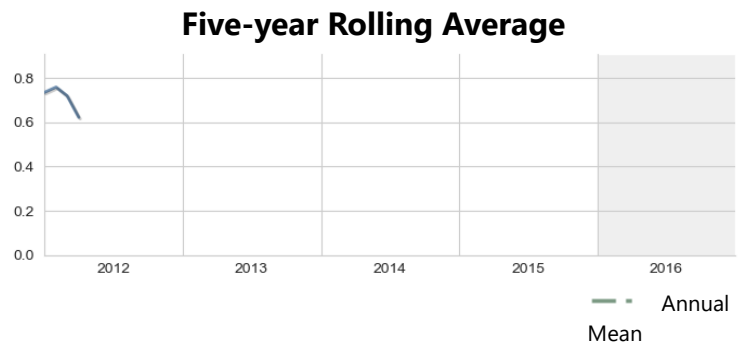
Chlorophyll a

Units: mg/l	Year 2016	Historical period of record
High		0.1
Mean		0.0029
Low		0.0003
No. of Samples	0	157



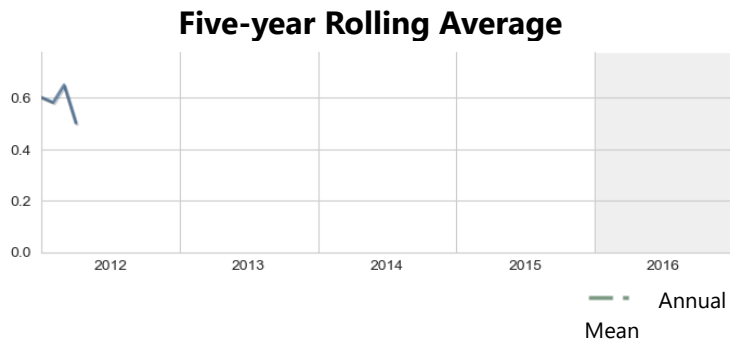
Nitrogen, Total

Units: mg/l	Year 2016	Historical period of record
High		1.9
Mean		0.8558
Low		0.34
No. of Samples	0	129



Phosphorus, Total

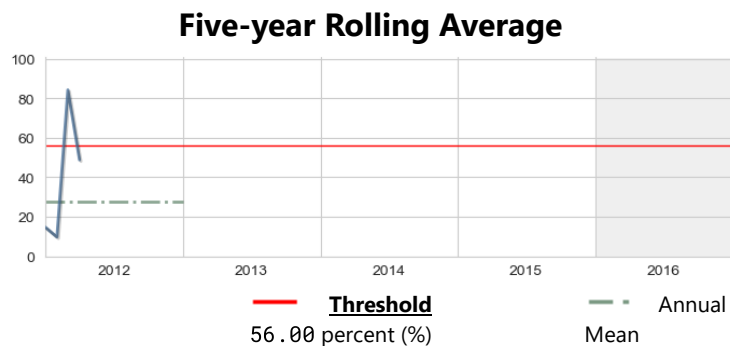
Units: mg/l	Year 2016	Historical period of record
High		1.3
Mean		0.3484
Low		0.05
No. of Samples	0	197



Dissolved Oxygen Saturation

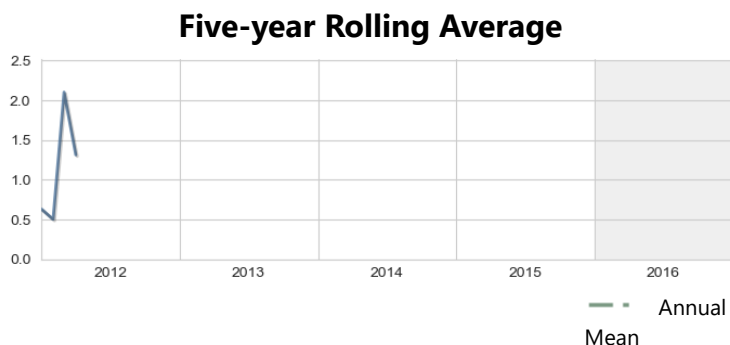
Note: Low DO saturation also may be naturally influenced by inflows from nearby wetlands or groundwater sources

Units: percent (%)	Year 2016	Historical period of record
High		128.7
Mean		38.49
Low		0.70
No. of Samples	0	293



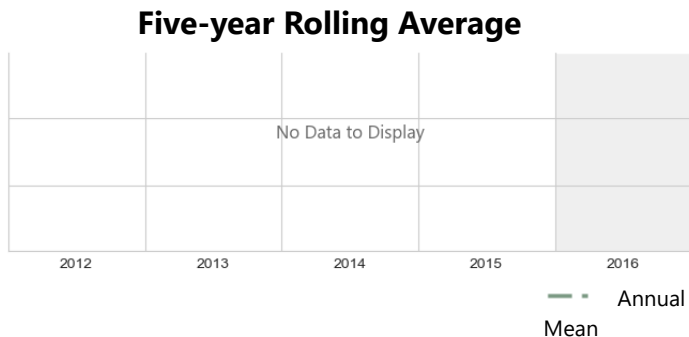
BOD, Biochemical oxygen demand

Units: mg/l	Year 2016	Historical period of record
High		5.4
Mean		1.63
Low		0.50
No. of Samples	0	137



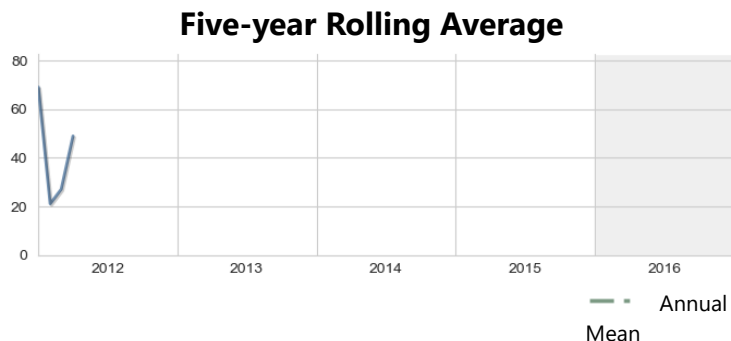
Color

Units: PCU	Year 2016	Historical period of record
High		125.0
Mean		23.7
Low		5.00
No. of Samples	0	121



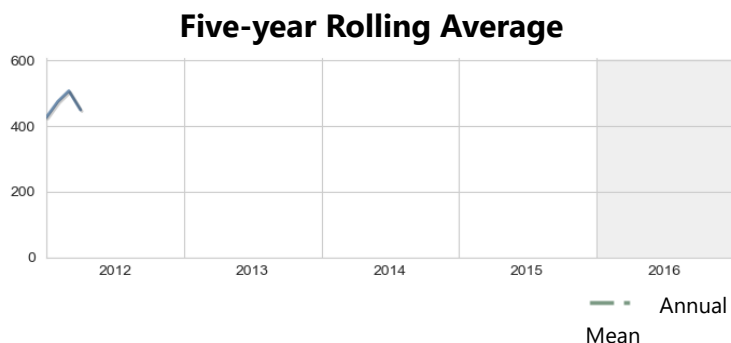
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2016	Historical period of record
High		912.0
Mean		23.48
Low		0.00
No. of Samples	0	244



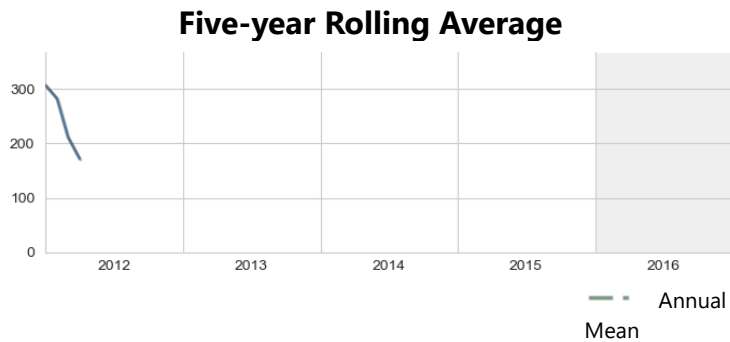
Nitrogen, Kjeldahl

Units: ug/l	Year 2016	Historical period of record
High		1,946.0
Mean		707.74
Low		160.00
No. of Samples	0	243



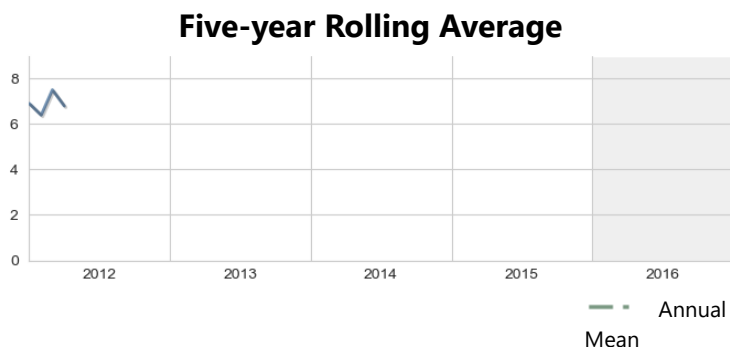
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2016	Historical period of record
High		656.0
Mean		90.66
Low		0.00
No. of Samples	0	205



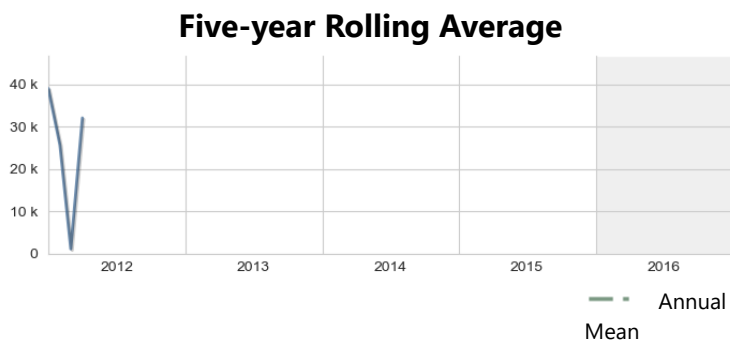
pH

Units: None	Year 2016	Historical period of record
High		8.4
Mean		7.6
Low		6.38
No. of Samples	0	245



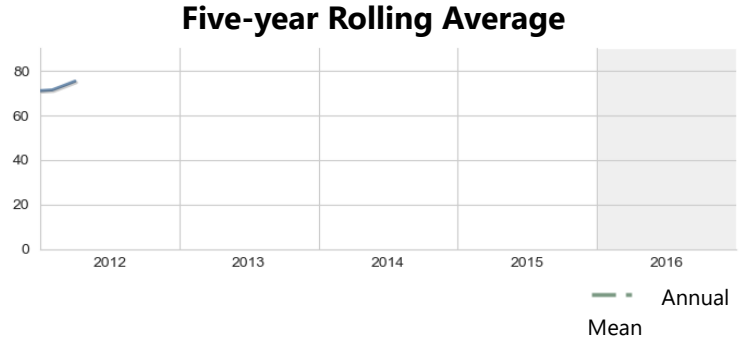
Specific conductance

Units: umho	Year 2016	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 2016	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.

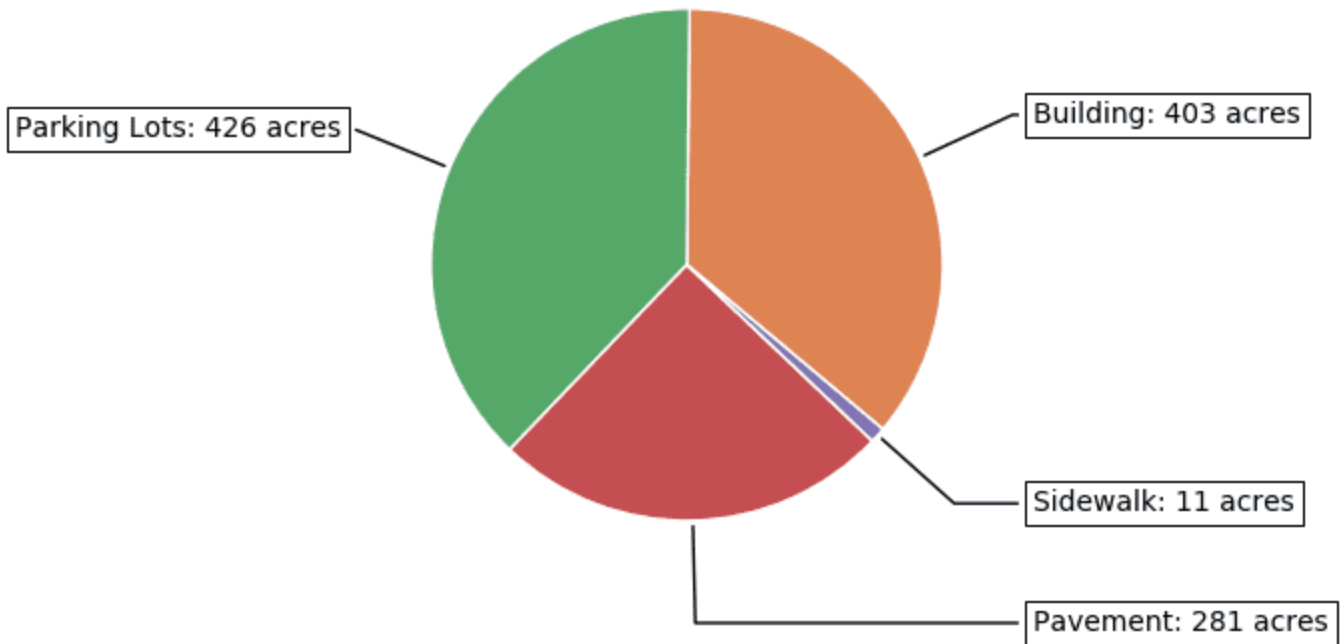


47% of the land area within the **Hudson Bayou Basin** is covered by impervious

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.

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

2016 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

