

40D-8.041 Minimum Flows.

(1) Minimum Flows for the Lower Hillsborough River.

(a) For the purposes of Minimum Flows, the Lower Hillsborough River is defined as the River downstream of Fletcher Avenue. A tributary of the Lower Hillsborough River is Sulphur Springs, an artesian spring which enters the River via a short spring run at a point 2.2 miles downstream of the City's dam.

(b) The Minimum Flows for the Lower Hillsborough River are based on extending a salinity range less than 5 ppt from the Hillsborough River Dam toward Sulphur Springs. The Minimum Flows for the Lower Hillsborough River are 20 cubic feet per second ("cfs") freshwater equivalent from July 1 through March 31 and 24 cfs fresh water equivalent from April 1 through June 30 at the base of the dam as adjusted based on a proportionate amount that flow at the United States Geological Survey Gauge No. 0203000 near Zephyrhills, Florida ("Gauge") is below 58 cfs. The adjustment is that for each one cfs that Hillsborough River flow at the Gauge is below 58 cfs, when 20 cfs freshwater equivalent is otherwise required, the Minimum Flow is adjusted by reducing it by 0.35 cfs; when 24 cfs freshwater equivalent is otherwise required, the Minimum Flow is adjusted by reducing it by 0.40 cfs. For purposes of this paragraph 40D-8.041(1)(b), F.A.C., freshwater equivalent means water that has a salinity concentration of 0.0 ppt for modeling purposes.

(2) Minimum Flows for the upper Hillsborough River.

(a) The Minimum Flows are to ensure that the minimum hydrologic requirements of the water resources or ecology of the natural systems associated with the river are met.

(b) Minimum Flows for the upper Hillsborough River at the USGS Hillsborough River near Morris Bridge Gage USGS # 02303330 ("Morris Bridge Gage") are set forth in Table 8-12 below. The long-term compliance standards set forth in Table 8-13 are established based on the application of the Minimum Flows to the lowest anticipated natural flow conditions. Minimum Flows for the upper Hillsborough River are both seasonal and flow dependent. Two standards are flow based and applied continuously regardless of season. The first is a Minimum Low Flow threshold of 52 cfs at the Morris Bridge Gage. The second is a Minimum High Flow threshold of 470 cfs at the Morris Bridge Gage. The Minimum High Flow is based on changes in the number of days of inundation of floodplain features. There are also three seasonally dependent or Block specific Minimum Flows. The Block 1 and Block 2 Minimum Flows are based on potential changes in habitat availability for fish species and macroinvertebrate diversity. The Block 3 Minimum Flow is based on changes in the number of days of connection with floodplain features.

Table 8-12 Minimum Flow for Upper Hillsborough River at USGS Hillsborough River near Morris Bridge Gage

Period	Effective Dates	Where Flow on Previous Day Equals:	Minimum Flow Is
Annually	January 1 to December 31	≤52 cfs >52cfs and <470 cfs ≥470 cfs	52 cfs Seasonally dependent – see Blocks below Previous day flow minus 8%
Block 1	April 20 to June 24	≤52 >52cfs and <470 cfs ≥470 cfs	52 cfs previous day flow minus 10% Previous day flow minus 8%
Block 2	October 28 to April 19	≤52 >52cfs and <470 cfs ≥470 cfs	52 cfs previous day flow minus 11% previous day flow minus 8%
Block 3	June 25 to October 27	≤52 cfs >52 cfs and <470cfs ≥470 cfs	52 cfs previous day flow minus 13% previous day flow minus 8%

(c) Compliance – The Minimum Flows are met when the flows in Table 8-13 are achieved.

Table 8-13 Compliance Standards for the Hillsborough River near Morris Bridge Gage

Minimum Flow	Hydrologic Statistic	Flow (cfs)
Annual Flow	10-Year Mean	190
	10-Year Median	96

Minimum Flow	Hydrologic Statistic	Flow (cfs)
	5-Year Mean	149
	5-Year Median	74
Block 1	10-Year Mean	74
	10-Year Median	62
	5-Year Mean	57
	5-Year Median	52
Block 2	10-Year Mean	153
	10-Year Median	89
	5-Year Mean	105
	5-Year Median	72
Block 3	10-Year Mean	287
	10-Year Median	150
	5-Year Mean	235
	5-Year Median	107

(3) Minimum Flow for Sulphur Springs – The Minimum Flow for Sulphur Springs is based on minimization of salinity incursions into the Upper Sulphur Springs Run (“Upper Run”) from the Lower Hillsborough River (“LHR”) and to moderate temperature levels within the manatee protection zone of the LHR.

(a) As of October 1, 2012, the City of Tampa shall maintain a Minimum Flow for Sulphur Springs of:

1. 18 cfs, as measured at the United States Geological Survey Sulphur Springs Gauge No. 02306000 at Sulphur Springs, Florida, or;
2. 13 cfs when water levels in the Hillsborough River reservoir fall below 19 feet NGVD; and
3. 10 cfs during low tide stages in the LHR, provided that salinity incursions from the LHR into the upper spring run do not occur. Salinity incursions shall be defined as when salinity values in the upper spring run as measured at the United States Geological Survey Gauge Sulphur Springs Run at Sulphur Springs, Florida (#023060003) are greater than 1 ppt than the concurrent salinity value in the spring pool as measured at the United States Geological Survey Gauge Sulphur Springs Run at Sulphur Springs, Florida (#023060000) for a period of greater than 1 hour.

(b) Notwithstanding paragraph 40D-8.041(2)(a), F.A.C., above, and beginning the effective date of this rule, when spring flow is available, a Minimum Flow of 18 cfs shall be required if the temperature of either surface or bottom waters in the LHR near the Spring Run’s outlet is below 15° C.

(c) The City of Tampa may propose to the District modifications to the weirs and gates located within the upper and lower spring run that affect the flow rates and salinity levels in the Upper Run and the LHR. The District shall evaluate the modifications to determine whether the flow resulting from the operating capabilities of the modifications and modeling simulations of the resulting salinity incursions into the Upper Spring Run achieve the salinity goal of the Minimum Flow for Sulphur Springs. If the District determines that flows different from the Minimum Flows (“Different Flows”) will achieve the salinity goal and otherwise protect the resources of the Upper Spring Run, the District, upon request by the City, will recommend to the Governing Board revision of the Minimum Flow to reflect the Different Flow.

(4) The Minimum Flow for the Tampa Bypass Canal at structure 160 shall be 0 cfs.

(5) Minimum Flows for Middle Peace River.

(a) The Minimum Flows are to ensure that the minimum hydrologic requirements of the water resources or ecology of the natural systems associated with the river are met.

(b) Minimum Flows for the Middle Peace River at the USGS Peace River Arcadia Gage (“Arcadia Gage”) are set forth in Table 8-6 below. The long-term compliance standards set forth in Table 8-7 are established based on the application of the Minimum Flows to the lowest anticipated natural flow conditions. Minimum Flows for the Middle Peace River are both seasonal and flow-dependent. Two standards are flow-based and applied continuously regardless of season. The first is a Minimum Low Flow threshold of 67 cfs at the Arcadia Gage. The second is a Minimum High Flow threshold of 1,362 cfs at the Arcadia Gage. The Minimum High Flow is based on changes in the number of days of inundation of floodplain features. There are also three seasonally

dependent or Block-specific Minimum Flows. The Block 1 and Block 2 Minimum Flows are based on potential changes in habitat availability for fish species and macroinvertebrate diversity. The Block 3 Minimum Flow is based on changes in the number of days of connection with floodplain features.

Period	Effective Dates	Where Flow on Previous Day Equals:	Minimum Flow Is:
Annually	January 1 to December 31	≤67 ≤67 cfs and <1,362 >1,362	67 cfs Seasonally dependent – see Blocks below Previous day flow minus 8%
Block 1	April 20 to June 25	≤67 >67 cfs and <75 cfs >75 cfs and <1,362 >1,362	67 cfs 67 cfs previous day flow minus 10% previous day flow minus 8%
Block 2	October 27 to April 19	≤67 >67 cfs and <82 cfs >82 cfs and <1,362 >1,362	67 cfs 67 cfs previous day flow minus 18% previous day flow minus 8%
Block 3	June 26 to October 26	≤67 cfs >67 cfs and <73 cfs >73 cfs and <1,362 cfs >1,362	67 cfs 67 cfs previous day flow minus 13% previous day flow minus 8%

Minimum Flow	Hydrologic Statistic	Flow (cfs)
Annual Flow (January 1 through December 31)	10-Year Mean	547
	10-Year Median	243
	5-Year Mean	534
	5-Year Median	196
Block 1 (April 20 through June 25)	10-Year Mean	219
	10-Year Median	121
	5-Year Mean	160
	5-Year Median	64
Block 2 (October 27 through April 19)	10-Year Mean	359
	10-Year Median	182
	5-Year Mean	300
	5-Year Median	122
Block 3 (June 26 through October 26)	10-Year Mean	977
	10-Year Median	631
	5-Year Mean	790
	5-Year Median	382

(c) Compliance – The Minimum Flows are met when the flows in Table 8-7 are achieved.

(6) Minimum Flows for Myakka River.

(a) The Minimum Flows are to ensure that the minimum hydrologic requirements of the water resources or ecology of the natural systems associated with the river are met.

(b) Minimum Flows for the Myakka River at the USGS Myakka River near Sarasota Gage USGS #02298830 ("Sarasota Gage") are set forth in Table 8-10 below. The long-term compliance standards set forth in Table 8-B are established based on the application of the Minimum Flows to the lowest anticipated natural flow conditions. Minimum Flows for the Myakka River are both seasonal and flow dependent. Two standards are flow-based and applied continuously regardless of season. The first is a Minimum Low Flow threshold of 0 cfs at the Sarasota Gage. The second is a Minimum High Flow threshold of 577 cfs at the Sarasota Gage. The Minimum High Flow is based on changes in the number of days of inundation of floodplain features. There are also three seasonally dependent or Block specific Minimum Flows. The Block 1 and Block 2 Minimum Flows are based on potential changes in habitat availability for fish species and macroinvertebrate diversity. The Block 3 Minimum Flow is based on changes in the number of days of connection with floodplain features.

Period	Effective Dates	Where Flow on Previous Day Equals:	Minimum Flow Is
Annually	January 1 to December 31	0 cfs 0 cfs	0 cfs Seasonally dependent see Blocks below
Block 1	April 20 to June 25	0 cfs >0 cfs	0 cfs previous day flow minus 15%
Block 2	October 27 to April 19	0 cfs >0 cfs	0 cfs previous day flow minus 5%
Block 3	June 26 to October 26	0 cfs >0 cfs and >577 cfs >577 cfs	0 cfs previous day flow minus 16% previous day flow minus 7%

(c) Compliance – The Minimum Flows are met when the flows in Table 8-11 are achieved.

Minimum Flow	Hydrologic Statistic	Flow (cfs)
Annual Flow	10-Year Mean	172
	10-Year Median	12
	5-Year Mean	149
	5-Year Median	5
Block 1	10-Year Mean	23
	10-Year Median	0
	5-Year Mean	4
	5-Year Median	0
Block 2	10-Year Mean	28
	10-Year Median	4
	5-Year Mean	15
	5-Year Median	3
Block 3	10-Year Mean	324
	10-Year Median	181
	5-Year Mean	241
	5-Year Median	133

(7) Minimum Flows for upper Peace River.

(a) Over the last several decades there has been a significant decline in flow in the upper Peace River, especially during the dry season. One of the major contributing factors is the elimination of baseflow as a result of ground water withdrawals that have lowered the potentiometric surface of the upper Floridan aquifer. In addition, surface-water drainage alterations, reduction in surface

storage, long-term cyclical declines in rainfall and karst openings in the riverbed have played significant roles in reducing flow in the upper Peace River.

(b) The minimum flows are to ensure that the minimum hydrologic requirements of fish and natural systems associated with the river are met and not jeopardized by withdrawals. At this time only Minimum Low Flows are being established. It is anticipated that mid- and high-minimum flows will be established once the controlling factors that affect those flows are better understood.

(c) The Minimum Low Flows for the upper Peace River are set forth in Table 8-8 below. The Minimum Low Flows are established based on the lowest acceptable flow under the lowest anticipated flow conditions. This is determined by providing for the hydrologic requirements of biological communities associated with the upper Peace River system, as well as considering non-consumptive uses including fishing, wildlife observation, general recreation, aesthetic enjoyment, canoeing and boating. This determination uses professional experience and judgment to identify key habitats and hydrologic requirements for specific biotic assemblages. This approach results in establishing Minimum Low Flows for the upper Peace River based on maintaining the higher of the water elevations needed for fish passage (0.6 feet or 7.2 inches) or the lowest wetted perimeter inflection point (as much stream bed coverage as possible for the least amount of flow) as set forth below. A ninety-five percent annual exceedance occurs when the flow is greater than the Minimum Low Flow at least ninety-five percent of the days, or 350 days, of a calendar year.

Location/Gage	Minimum Flow (cubic feet per second)
Bartow / USGS Bartow River Gage No. 02294650	Annual 95% exceedance flow of 17 cfs
Ft. Meade / USGS Ft. Meade River Gage No. 02294898	Annual 95% exceedance flow of 27 cfs
Zolfo Springs / USGS Zolfo Springs River Gage No. 02295637	Annual 95% exceedance flow of 45 cfs

(d) Compliance – The Minimum Low Flow is achieved when the measured flow rate is at or above the Minimum Low Flow for three consecutive years. Once the Minimum Low Flow has been achieved for three consecutive years, the Minimum Low Flow is not met when the measured flow rate is below the Minimum Low Flow for two out of ten years commencing the year after achievement. If the two years below the minimum flow occur anytime before the ten year period is complete, the upper Peace River is deemed below its Minimum Low Flow and the three consecutive years above the Minimum Low Flow is again required for compliance. Once the ten-year period is complete, the period will roll forward one year each year.

(8) Minimum Flows for the lower Peace River.

(a) The Minimum Flows are to ensure that the minimum hydrologic requirements of the water resources or ecology of the natural systems associated with the estuarine reach of the lower Peace River are met.

(b) Minimum Flows for the estuarine reach of the lower Peace River are based on the sum of the combined flows of the USGS Peace River near Arcadia Gage #02296750 plus the flow at the USGS Horse Creek near Arcadia Gage #02297310, and the USGS Joshua Creek at Nocatee Gage #02297100, and are set forth in Table 8-20 below. Minimum Flows for the lower Peace River are both seasonal and flow dependent. One standard, the Minimum Low Flow Threshold, is flow based and applied continuously regardless of season. No surface water withdrawals shall be permitted that would cumulatively cause the flow to be reduced below the Minimum Low Flow Threshold of 130 cfs based on the sum of the mean daily flows for the three gages listed above. Additionally, permitted withdrawals shall cease when flows are below the Minimum Low Flow Threshold of 130 cfs. The total permitted maximum withdrawals on any day shall not exceed 400 cfs. There are also three seasonally dependent or Block specific Minimum Flows that are based on the sum of the mean daily flows for the three gages denoted above that would occur in the absence of any permitted upstream withdrawals. The Block Minimum Flows are based on potential changes in habitat availability for select salinity ranges within a season.

Period	Effective Dates	Where Flow on Previous Day Equals:	Minimum Flow Is
Annually	January 1 through December 31	≤130 cfs	Actual flow (no surface water withdrawals)

		>130 cfs	permitted) Seasonally dependent – see Blocks below
Block 1	April 20 through June 25	≤130 cfs	Actual flow (no surface water withdrawals permitted)
		>130 cfs	previous day's flow minus 16% but not less than 130 cfs
Block 2	October 28 through April 19	≤130 cfs	Actual flow (no surface water withdrawals permitted)
		>130 cfs and <625 cfs	previous day's flow minus 16% but not less than 130 cfs
		≥625 cfs	previous day's flow minus 29%
Block 3	June 26 through October 27	≤130 cfs	Actual flow (no surface water withdrawals permitted)
		>130 cfs and <625 cfs	previous day's flow minus 16% but not less than 130 cfs
		≥625 cfs	previous day's flow minus 38%

(c) Minimum five-year and ten-year moving mean and median flow values are set forth in Table 8-20 as a tool to assess whether flows to the lower Peace River remain above flow rates that are expected to occur with implementation of the Minimum Flow described in Table 8-21 and a daily maximum withdrawal rate of 400 cfs. The means and medians are based on evaluation of daily flow records for the three gages listed above for the period 1951 through 2008. Yearly means and medians were computed for January 1 through December 31 of each year, then moving five-year and ten-year averages were calculated from these yearly values. Therefore, the five-year and ten-year means and medians are hydrologic statistics that represent the flows that will be met or exceeded if compliance with the Minimum Flow and the 400 cfs maximum withdrawal rate is maintained during hydrologic conditions similar to the 1951-2008 period. Climatic changes or future structural alterations in the watershed could potentially affect surface water or groundwater flow characteristics within the watershed and flows in the river. Therefore, as additional information relevant to Minimum Flows development becomes available, the District is committed to periodically evaluate whether any declines in these minimum moving average values below that expected with the application of the Minimum Flow are due to factors other than permitted water use.

(d) The Minimum Flows for the lower Peace River will be reevaluated to incorporate additional ecological data for the Lower Peace River within 5 years of adoption of this rule.

Table 8-21 Minimum Five-Year and Ten-Year Moving Mean and Median flows for the lower Peace River based on the sum of flows from Horse Creek, Joshua Creek, and the Peace River at Arcadia		
Minimum Flow	Hydrologic Statistic	Flow (cfs)
Annual Flow	10-Year Mean	713
	10-Year Median	327
	5-Year Mean	679
	5-Year Median	295
Block 1	10-Year Mean	284
	10-Year Median	264
	5-Year Mean	204
	5-Year Median	114
Block 2	10-Year Mean	429
	10-Year Median	383
	5-Year Mean	330
	5-Year Median	235
Block 3	10-Year Mean	1260
	10-Year Median	930
	5-Year Mean	980

Table 8-21 Minimum Five-Year and Ten-Year Moving Mean and Median flows for the lower Peace River based on the sum of flows from Horse Creek, Joshua Creek, and the Peace River at Arcadia

Minimum Flow	Hydrologic Statistic	Flow (cfs)
	5-Year Median	595

(9) Minimum Flows for the Braden River.

(a) The Minimum Flows are to ensure that the minimum hydrologic requirements of the water resources or ecology of the natural systems associated with the river are met.

(b) Minimum Flows for the Braden River at the USGS Braden River near Lorraine Gage USGS # 02300032 ("near Lorraine Gage") are set forth in Table 8-14 below. The long-term compliance standards set forth in Table 8-15 are established based on the application of the Minimum Flows to the lowest anticipated natural flow conditions. Minimum Flows for the Braden River are both seasonal and flow dependent. Two standards are flow based and applied continuously regardless of season. The first is a Minimum Low Flow threshold of 7 cfs at the near Lorraine Gage. The second is a Minimum High Flow threshold of 54 cfs at the near Lorraine Gage. The Minimum High Flow is based on changes in the number of days of inundation of floodplain features. There are also three seasonally dependent or Block specific Minimum Flows. The Block 1 and Block 2 Minimum Flows are based on potential changes in habitat availability for fish species and macroinvertebrate diversity. The Block 3 Minimum Flow is based on changes in the number of days of connection with floodplain features.

Table 8-14 Minimum Flow for Braden River at USGS Braden River near Lorraine Gage

Period	Effective Dates	Where Flow on Previous Day Equals:	Minimum Flow Is
Annually	January 1 to December 31	≤7 cfs >7cfs and <54 cfs ≥54 cfs	7 cfs Seasonally dependent – see Blocks below Previous day flow minus 10%
Block 1	May 7 to June 19	≤7 >7 cfs	7 cfs previous day flow minus 10%
Block 2	October 25 to May 6	≤7 >7 cfs and <54 cfs ≥54 cfs	7 cfs previous day flow minus 11% previous day flow minus 10%
Block 3	June 20 to October 24	≤7 cfs >7 cfs and <54 cfs ≥54 cfs	7 cfs previous day flow minus 19% previous day flow minus 10%

(c) Compliance – The Minimum Flows are met when the flows in Table 8-15 are achieved.

Table 8-15 Compliance Standards for Braden River near Lorraine Gage

Minimum Flow	Hydrologic Statistic	Flow (cfs)
Annual Flow	10-Year Mean	31
	10-Year Median	3
	5-Year Mean	26
	5-Year Median	2
Block 1	10-Year Mean	5
	10-Year Median	1
	5-Year Mean	2
	5-Year Median	0
Block 2	10-Year Mean	20
	10-Year Median	3
	5-Year Mean	10
	5-Year Median	1
Block 3	10-Year Mean	65

Table 8-15 Compliance Standards for Braden River near Lorraine Gage

Minimum Flow	Hydrologic Statistic	Flow (cfs)
	10-Year Median	23
	5-Year Mean	43
	5-Year Median	7

(10) Minimum Flows for Crystal Springs Located Within the Hillsborough River Basin, Hillsborough County, Florida

(a) The Minimum Flows are to ensure that the minimum hydrologic requirements of the water resources or ecology of the natural systems associated with the upper Hillsborough River are met.

(b) The Minimum Flow for Crystal Springs is stated as the flow measured by USGS physical measurements. Flows from Crystal Springs are calculated as the difference between upstream flow measurements at USGS Gage No. 02301990 – Hillsborough River Above Crystal Springs near Zephyrhills, FL and downstream flow measurements at USGS Gage No. 02302010 – Hillsborough River Below Crystal Springs near Zephyrhills, FL measurements and constitute the combined flow of the main spring vent and numerous smaller vents in the river channel. The minimum flow for the Crystal Springs complex is 46 cfs based on a 5-year running mean and median.

(11) Minimum Flows for Alafia River – Freshwater Segment.

(a) The Minimum Flows are to ensure that the minimum hydrologic requirements of the water resources or ecology of the natural systems associated with the river are met.

(b) Minimum Flows for the Alafia River at the USGS Alafia River at Lithia Gage USGS # 02301500 (“Lithia Gage”) are set forth in Table 8-16 below. The long-term compliance standards set forth in Table 8-17 are established based on the application of the Minimum Flows to the lowest anticipated natural flow conditions. Minimum Flows for the Alafia River are both seasonal and flow dependent. Two standards are flow-based and applied continuously regardless of season. The first is a Minimum Low Flow threshold of 59 cfs at the Lithia Gage. The second is a Minimum High Flow threshold of 375 cfs at the Lithia Gage. The Minimum High Flow is based on changes in the number of days of inundation of floodplain features. There are also three seasonally dependent or Block specific Minimum Flows. The Block 1 and Block 2 Minimum Flows are based on potential changes in habitat availability for fish species and macroinvertebrate diversity. The Block 3 Minimum Flow is based on changes in the number of days of connection with floodplain features.

Table 8-16 Minimum Flow for Alafia River at USGS Alafia River at Lithia Gage

Period	Effective Dates	Where Flow on Previous Day Equals:	Minimum Flow Is
Annually	January 1 to December 31	≤59 cfs >59 cfs and <374 cfs >374 cfs	59 cfs Seasonally dependent – see Blocks below Previous day flow minus 8%
Block 1	April 20 to June 25	≤57 cfs >57 cfs and <66 cfs >66 cfs and <374 cfs >374 cfs	59 cfs 67 cfs previous day flow minus 10% previous day flow minus 8%
Block 2	October 27 to April 19	≤59 cfs >59 cfs and <69 cfs >69 cfs and <374 cfs >374 cfs	59 cfs 67 cfs previous day flow minus 15% previous day flow minus 8%
Block 3	June 26 to October 26	≤59 cfs >59 cfs and <64 cfs >64 cfs and <374 cfs >374 cfs	59 cfs 67 cfs previous day flow minus 13% previous day flow minus 8%

(c) Compliance – The Minimum Flows are met when the flows in Table 8-17 are achieved.

Table 8-17 Compliance Standards for Alafia River at Lithia Gage

Table 8-17 Compliance Standards for Alafia River at Lithia Gage

Minimum Flow	Hydrologic Statistic	Flow (cfs)
Annual Flow	10-Year Mean	192
	10-Year Median	101
	5-Year Mean	163
	5-Year Median	86
Block 1	10-Year Mean	85
	10-Year Median	35
	5-Year Mean	53
	5-Year Median	27
Block 2	10-Year Mean	137
	10-Year Median	82
	5-Year Mean	110
	5-Year Median	66
Block 3	10-Year Mean	318
	10-Year Median	179
	5-Year Mean	276
	5-Year Median	163

(12) Minimum Flow for Lower Alafia River System.

(a) For purposes of this rule, the Lower Alafia River System includes the watercourse downstream of the USGS Gage No. 02301500 Alafia River at Lithia, FL (the "Alafia River at Lithia Gage") including Lithia Springs, Buckhorn Spring, and their associated spring runs.

(b) The Minimum Flow is to ensure that the minimum hydrologic requirements of the water resources or ecology of the natural systems associated with the Lower Alafia River System are met. Daily flows to the Lower Alafia River System are calculated by multiplying mean daily flow values at the Alafia River at Lithia Gage by a factor of 1.117, then adding the mean daily flows from Lithia Spring Major and Buckhorn Spring. Flows are calculated in the absence of withdrawals and are based on mean flows at the Alafia River at Lithia Gage from the previous day and the most recently recorded periodic values from Lithia Spring Major and Buckhorn Spring. The Minimum Flow for the Lower Alafia River System is intended to preserve 81% of the natural flow to the Lower Alafia River System when flows exceed a low-flow threshold of 120 cfs.

(c) The Minimum Flow is 81% of the daily flow to the Lower Alafia River System that is above 120 cfs.

(d) Minimum five-year and ten-year moving average values are set forth in Table 8-19 as a tool to assess whether flows to the Lower Alafia River remain above flow rates that are expected to occur with implementation of the Minimum Flow. These values represent minimum values of the averages of yearly mean and median flows to the Lower Alafia River System calculated over moving five-year and ten-year periods. These values were calculated by applying the potential maximum withdrawals that do not violate the Minimum Flow to historic flow records. It is, therefore, expected that flows to the Lower Alafia River System will not go below these values if compliance with the Minimum Flow is maintained. However, future climatic conditions or structural alterations in the watershed of the Lower Alafia River System could potentially affect surface water or ground contributions to the Lower Alafia River System's flow regime. The District will, therefore, periodically evaluate whether these minimum moving average values expected with application of the Minimum Flow, or other factors, have possibly caused flows in the Lower Alafia River System to decline.

Value	Flow (cfs)
Minimum 10-Year Moving Average (Based On Yearly Mean Flows)	247
Minimum 10-Year Moving Average Median (Based On Yearly Median Flows)	150
Minimum 5-Yearly Mean Flows (Based on Yearly Mean Flows)	217
Minimum 5 Year Moving Average (Based On Yearly Median Flows)	120

Flows to the Lower Alafia River System were estimated for the period of record at the Alafia River at Lithia Gage. The period from 1987 to 2003 was used to create a relationship between daily flows at the Gage and total flows to the Lower Alafia River System. Five-year and ten-year moving average statistics were then calculated for estimated long-term flows to the Lower Alafia River System that were derived from the Alafia River at Lithia Gage.

(13) Minimum Flows for Weeki Wachee River System located within Hernando County, Florida.

(a) The Minimum Flows are to ensure that the minimum hydrologic requirements of the water resources or ecology of the natural systems associated with the Weeki Wachee River System are met. The Minimum Flow for the Weeki Wachee River System is intended to maintain 90% of the natural flow of the Weeki Wachee River System. For purposes of this rule, the Weeki Wachee River System includes the watercourse from the Weeki Wachee Spring to the Gulf of Mexico including Twin Dees Spring, Mud River (including Salt Spring) from Mud Spring to the confluence with the Weeki Wachee River and Jenkins Springs and associated spring run.

(b) The Minimum Flow for the Weeki Wachee River System is 90% of its natural flow. This Minimum Flow is inclusive of spring flow, the freshwater and the estuarine portion of the Weeki Wachee River.

(c) The Minimum Flow applies upstream of the USGS Gage No. 02310525 at Weeki Wachee River near Brooksville ("Brooksville Gage") to the Weeki Wachee Spring vent and downstream of the Brooksville Gage to the Gulf of Mexico. The Minimum Flow shall be met continuously and is evaluated on a daily basis.

(d) Because climatic variation can influence river flow regimes, five and ten year mean and median standards have been developed and are set forth in Table 8-18 ("Means and Medians") as a tool to assess whether compliance with the Minimum Flow maintains 90% of the natural flow of the Weeki Wachee River System. The Means and Medians are hydrologic statistics that represent flows expected to occur during long-term periods when the Minimum Flows are being met. The Means and Medians are generated from flow records that are representative of a period devoid of significant anthropogenic impacts. The District will periodically evaluate the Means and Medians. These are evaluated as the mean and medians of annual means and medians, evaluated from January 1 through December 31 of each year. The evaluation is for both the flow at the Brooksville Gage and at the USGS Weeki Wachee Well No. 283201082315601. The flow at the Brooksville Gage is evaluated directly against Table 8-18. The well data is converted to flow with the relation $Q \text{ (cfs)} = -47.487 + 12.38 \text{ (well level) (ft)}$ and then evaluated against Table 8-18. The Means and Medians were developed using the Minimum Flow and the presumed historic flow records. Therefore, it is expected that the Means and Medians will be met if compliance with the Minimum Flow is maintained. However, since future structural alterations could potentially affect surface water or groundwater flow characteristics within the watershed and additional information pertaining to Minimum Flows development may become available, the District is committed to periodic review and revision of the Minimum Flows, as necessary.

Table 8-18 Five and Ten Year Means and Medians for the Weeki Wachee River System

Criterion	Flow (cfs)
Minimum 10 Year Moving Average (Based On Annual Average Flows)	141
Minimum 10 Year Moving Average (Based On Annual Median Flows)	131
Minimum 5 Year Moving Average (Based On Annual Average Flows)	136
Minimum 5 Year Moving Average (Based On Annual Median Flows)	128

(e) Water Use Permits issued after May 10, 2009 that authorize surface water withdrawals from, or ground water withdrawals that impact Mud Spring, Salt Spring or Jenkins Spring, shall gauge the flow of the applicable spring and report the flow to the District as provided in the Water Use Permit.

(14) Minimum Flows for the Dona Bay/Shakett Creek System below Cow Pen Slough located within the Manasota Basin, Sarasota County, Florida.

(a) The Minimum Flows are to ensure that the minimum hydrologic requirements of the water resources and ecology of the natural systems associated with the Dona Bay/Shakett Creek System are met. For purposes of this rule, the Dona Bay/Shakett Creek System includes the watercourse and its tributaries from the most downstream control structure on Cow Pen Slough, known as CPS-2 and operated by Sarasota County (hereinafter referred to as "CPS-2") to the Gulf of Mexico including Shakett Creek, Salt Creek, Fox Creek and Dona Bay.

(b) The Minimum Flow for the Dona Bay/Shakett Creek System is 100% of the natural flow of the system contributed by the watershed below CPS-2. This Minimum Flow is exclusive of flow, which is generated from the channelized watershed above CPS-2. Flow generated from the channelized watershed above CPS-2 shall be based on the flow records from CPS-2.

(15) Minimum Flows for the Anclote River.

(a) The Minimum Flows are to ensure that the minimum hydrologic requirements of the water resources or ecology of the natural systems associated with the freshwater and estuarine reaches of the Anclote River are met.

(b) Minimum Flows for the freshwater and estuarine reaches of the Anclote River are based on the natural flow at the USGS Anclote River near Elfers Gage No. 02310000 (the "Elfers Gage") and are set forth in Table 8-22 (estuarine reach downstream of the Elfers Gage) and Table 8-23 (freshwater reach upstream of Elfers Gage). Natural flow is defined as flow that would exist in the absence of withdrawal impacts. There are three seasonally dependent or Block specific Minimum Flows for each reach. In addition, the Minimum Flows for the freshwater reach are flow-based. The Minimum Low Flow Threshold for the freshwater reach is applied continuously regardless of season. No surface water withdrawal from the freshwater reach will be permitted that would cumulatively cause the natural flow to be reduced below the Minimum Low Flow Threshold of 12 cfs. Additionally, permitted withdrawals shall cease when flows are below the Minimum Low Flow Threshold of 12 cfs. In addition, the total permitted maximum withdrawals from the freshwater reach on any given day from July 22 through April 11 shall not exceed eight percent of the previous day's flow when natural flow equals or exceeds 138 cfs at the Elfers Gage.

Period	Effective Dates	Minimum Flow Is
Block 1	April 12 through July 21	Previous day's flow minus 12%
Block 2	October 15 through April 11	Previous day's flow minus 16%
Block 3	July 22 through October 14	Previous day's flow minus 18%

The Minimum Flow at any given point below the Elfers Gage is based on the previous day's natural flow at that point minus the percentage specified above corresponding to the applicable Block.

Period	Effective Dates	Where Flow on Previous Day Equals:	Minimum Flow Is
Annually	January 1 to December 31	≤12 cfs >12 cfs and <138 cfs ≥138 cfs	Actual flow Seasonally dependent – see Blocks below Seasonally dependent – see Blocks below
Block 1	April 12 through July 21	≤12 cfs >12 cfs	Actual flow Previous day's flow minus 11% but not less than 12 cfs
Block 2	October 15 through April 11	≤12 cfs >12 cfs and <138 cfs ≥138 cfs	Actual flow Previous day's flow minus 14% but not less than 12 cfs Previous day's flow minus 8%
Block 3	July 22 through October 14	≤12 cfs >12 cfs and <138 cfs ≥138 cfs	Actual flow Previous day's flow minus 18% but not less than 12 cfs Previous day's flow minus 8%

(c) Minimum five-year and ten-year moving annual average values are set forth in Table 8-22 as a tool to assess whether flows to the Anclote River remain above flow rates that are expected to occur with implementation of the Minimum Flow described in Table 8-24. The Means and Medians are based on evaluation of daily flow records for the Elfers Gage, adjusted for withdrawal impacts for the period 1955 through 2006. Yearly means and medians are computed for January 1 through December 31 of each

year. Therefore, the Means and Medians are hydrologic statistics that represent the flows that will be met or exceeded if compliance with the Minimum Flow is maintained during hydrologic conditions similar to the 1955-2006 period. However, since changes in the watershed such as future structural alterations and climatic change could potentially affect surface water or groundwater flow characteristics and additional information relevant to Minimum Flows development may become available, the District is committed to periodic re-evaluation of the Minimum Flows.

Table 8-24 Minimum Five-Year and Ten-Year Moving Mean and Median Flows for the Anclote River above USGS Anclote River near Elfers Gage USGS No. 02310000 Based on Application of the Table 8-23 Minimum Flow on Adjusted Flows at USGS 02310000		
Minimum Flow	Hydrologic Statistic	Flow (cfs)
Annual Flow	10-Year Mean	48
	10-Year Median	17
	5-Year Mean	36
	5-Year Median	15
Block 1	10-Year Mean	13
	10-Year Median	7
	5-Year Mean	11
	5-Year Median	6
Block 2	10-Year Mean	25
	10-Year Median	17
	5-Year Mean	21
	5-Year Median	15
Block 3	10-Year Mean	92
	10-Year Median	64
	5-Year Mean	81
	5-Year Median	56

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.036, 373.0361, 373.042, 373.0421 FS. History—Readopted 10-5-74, Amended 12-31-74, Formerly 16J-0.15, 40D-1.601, Amended 10-1-84, 8-7-00, 2-6-06, 4-6-06, 1-1-07, 11-25-07, 2-18-08, 3-2-08, 5-12-08, 5-10-09, 3-23-10, 3-28-10, 7-12-10, 8-2-10 (8), 8-2-10 (15).