Appendix A

Minimum Flow Rule

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
	5-Year Mean	149
	5-Year Median	74

Table 8-13 Compliance Standards for the Hillsborough River near Morris Bridge Gage		
Minimum Flow	Hydrologic Statistic	Flow (cfs)
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.

Table 8-6 Minimum Flow for Middle Peace River at USGS Peace River at Arcadia Gage			
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%

Table 8-7 Compliance Standards for Middle Peace River at Arcadia Gage		
Minimum Flow	Hydrologic Statistic	Flow (cfs)
Annual Flow (January 1 through December 31)	10-Year Mean 10-Year Median 5-Year Mean 5-Year Median	547 243 534 196
Block 1 (April 20 through June 25)	10-Year Mean 10-Year Median 5-Year Mean 5-Year Median	219 121 160 64
Block 2 (October 27 through April 19)	10-Year Mean 10-Year Median 5-Year Mean 5-Year Median	359 182 300 122
Block 3 (June 26 through October 26)	10-Year Mean 10-Year Median 5-Year Mean 5-Year Median	977 631 790 382

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

(6) Minimum Flows for Myakka River.

(a) Upper Myakka River.

1. 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.

2. 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.

Table 8-10 Minimum Flow for Myakka River at USGS Myakka River near Sarasota Gage			
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%

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

Table 8-11 Compliance Standards for Myakka River at USGS Myakka River near Sarasota Gage		
Minimum Flow	Hydrologic Statistic	Flow (cfs)
Annual Flow	10-Year Mean 10-Year Median 5-Year Mean 5-Year Median	172 12 149 5
Block 1	10-Year Mean 10-Year Median 5-Year Mean 5-Year Median	23 0 4 0
Block 2	10-Year Mean 10-Year Median 5-Year Mean 5-Year Median	28 4 15 3
Block 3	10-Year Mean 10-Year Median 5-Year Mean 5-Year Median	324 181 241 133

(b) Lower Myakka River.

1. The Minimum Flows are necessary to ensure that the minimum hydrologic requirements of the water resources or ecology of the natural systems associated with the Lower Myakka River are met. The Lower Myakka River extends from the outlet of Lower Myakka Lake to the mouth of the river at Charlotte Harbor.

2. The Lower Myakka River receives flows from the Upper Myakka River sub-basin at the location of the USGS gage Myakka River near Sarasota No. 02298830 (the “Myakka Gage”) that are in excess of the naturally occurring flows. The District will remove the excess flows at rates between 0 and 130 cfs in the upper river sub-basin in order to restore natural flows.

3. The Minimum Flows for the Lower Myakka River at the Myakka Gage is 90% of the adjusted flow, when the adjusted flow exceeds 400 cfs. The adjusted flow at the Myakka Gage shall be calculated by adding the flows measured at the Myakka Gage and the excess flows removed by the District from the Upper Myakka River.

(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 Floridian 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.

Table 8-8 Minimum Flows for the upper Peace River	
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) For purposes of this rule, the lower Peace River in DeSoto County, FL and Charlotte County, FL includes the watercourse from U.S. Geological Survey Peace River at SR 70 at Arcadia, FL Gage #02296750 to Charlotte Harbor.

(b) Minimum Flows for the lower Peace River are based on the sum of the daily average, combined, adjusted flows of the USGS Peace River Arcadia, FL Gage ("Gage No. 02296750"), the flow at the U.S. Geological Survey Joshua Creek at Nocatee, FL Gage ("Gage No. 02297100"), and the U.S. Geological Survey Horse Creek at SR 72 near Arcadia, FL Gage ("Gage No. 02297310") as set forth in Table 8-20. Adjusted flow is defined as flow that would exist in the absence of withdrawal impacts. Minimum Flows for the lower Peace River are flow dependent, and were developed based on the daily average, combined flow at Gage No. 02296750, Gage No. 02297100 and Gage No. 02297310 adjusted for withdrawals for the period of record from January 1, 1950 through December 31, 2018. There are seven flow dependent Minimum Flows. Permitted withdrawals shall cease when the sum of the mean daily flows for the three gages denoted above is below 130 cfs. Also, the total permitted maximum withdrawals on any day from the lower Peace River shall not exceed 400 cfs.

Table 8-20 Minimum Flow for Lower Peace River Based on the Combined (i.e., summed) Flows from the USGS Peace River at SR 70 at Arcadia, FL, Joshua Creek at Nocatee, FL, and Horse Creek at SR 72, near Arcadia, FL Gages Adjusted for Upstream Withdrawals	
If Adjusted Combined Flow in cubic feet per second (cfs) on the previous Day is:	Minimum Flow is:
≤130 cfs	Combined flow on the previous day
>130 cfs and ≤149 cfs	130 cfs
>149 cfs and ≤ 297 cfs	87% of combined flow on the previous day
> 297 cfs and ≤ 335 cfs	258 cfs
> 335 cfs and ≤ 622 cfs	77% of combined flow on the previous day

> 622 cfs and ≤ 798 cfs	479 cfs
> 798 cfs	60% of combined flow on the previous day

(c) Status assessments of the Minimum Flows for the lower Peace River will be completed to determine whether the flow is below or projected to fall below the Minimum Flows. Each status assessment is independent from and not a determination of water use permit compliance or environmental resource permit compliance. Permit compliance is a regulatory function that is not within the scope of this subsection. As part of each status assessment, the District will use the following approach:

1. The District will evaluate the Minimum Flow annually to determine the extent to which the flow of the lower Peace River has been reduced due to withdrawals as of the date of each status assessment at Gage No. 02296750, Gage No. 02297100 and Gage No. 02297310. The annual evaluation will be completed through a review of:

(a) Flow data;

(b) Water withdrawals;

(c) Aquifer water levels;

(d) Rainfall data; and

(e) Hydrologic modeling.

2. The District will also evaluate the Minimum Flows every five years as part of the regional water supply planning process. This evaluation will include the use of hydrologic modeling.

3. If the Minimum Flows are being met based on the annual evaluation or the evaluation performed as a part of the regional water supply planning process, then no further actions are required beyond continued monitoring.

(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)

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
	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
		>59 cfs and <374 cfs	Seasonally dependent – see Blocks below
		>374 cfs	Previous day flow minus 8%
Block 1	April 20 to June 25	≤57 cfs	59 cfs
		>57 cfs and <66 cfs	67 cfs
		>66 cfs and <374 cfs	previous day flow minus 10%

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
		>374 cfs	previous day flow minus 8%
Block 2	October 27 to April 19	≤59 cfs	59 cfs
		>59 cfs and <69 cfs	67 cfs
		>69 cfs and <374 cfs	previous day flow minus 15%
		>374 cfs	previous day flow minus 8%
Block 3	June 26 to October 26	≤59 cfs	59 cfs
		>59 cfs and <64 cfs	67 cfs
		>64 cfs and <374 cfs	previous day flow minus 13%
		>374 cfs	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		
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.

Table 8-19 Minimum Values of Five-year and Ten-year Moving Averages of Yearly Mean and Median Flows to the Lower Alafia River System

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 (cfs) = -47.487 + 12.38 (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.

Table 8-22 Minimum Flow for Anclote River below USGS Anclote River near Elfers Gage USGS No. 02310000 (Estuarine Reach)

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.		

Table 8-23 Minimum Flow for Anclote River above USGS Anclote River near Elfers Gage USGS No. 02310000 (Freshwater Reach)

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	Actual flow

Table 8-23 Minimum Flow for Anclote River above USGS Anclote River near Elfers Gage USGS No. 02310000 (Freshwater Reach)			
Period	Effective Dates	Where Flow on Previous Day Equals:	Minimum Flow Is
		>12 cfs and <138 cfs ≥138 cfs	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

(16) Minimum Flow for the Chassahowitzka River System.

(a) For purposes of this rule, the Chassahowitzka River System includes the watercourse from the Chassahowitzka Main Springs Complex to the Gulf of Mexico, including contributing tributaries and all named and unnamed springs that discharge to the Chassahowitzka River, and Blind Springs.

(b) The Minimum Flow for the Chassahowitzka River System is 92% of the natural flow as measured at the United States Geological Survey (USGS) Gage Chassahowitzka River near Homosassa Gage No. 02310650. Natural flow is defined for the purpose of this rule as the flow that would exist in the absence of water withdrawal impacts. The Minimum Flow is based on an 8% reduction from the natural flow of 61 cubic feet per second, which was adjusted for groundwater withdrawals using hydrologic

modeling for the period of record from February 20, 1997, through October 15, 2018, at the USGS Chassahowitzka River near Homosassa, FL Gage No. 02310650.

(c) Status assessments of the Minimum Flow for the Chassahowitzka River System will be completed to determine whether the flow is below or projected to fall below the Minimum Flow. Each status assessment is independent from and not a determination of water use permit compliance or environmental resource permit compliance. Permit compliance is a regulatory function that is not within the scope of this subsection. As part of each status assessment, the District will use the following approach:

1. The District will evaluate the Minimum Flow annually to determine the extent to which the flow of the Chassahowitzka River System has been reduced due to withdrawals as of the date of each status assessment at the USGS Chassahowitzka River near Homosassa, FL Gage No. 02310650. The annual evaluation will be completed through a review of:

(a) Flow data;

(b) Water withdrawals;

(c) Aquifer water levels;

(d) Rainfall data; and

(e) Hydrologic modeling.

2. The District will also evaluate the Minimum Flow every five years as part of the regional water supply planning process. This evaluation will include the use of hydrologic modeling.

3. If the Minimum Flow is being met based on the annual evaluation or the evaluation performed as a part of the regional water supply planning process, then no further actions are required beyond continued monitoring.

(d) The District will reevaluate the Minimum Flow by December 2029.

(17) Minimum Flow for the Homosassa River System.

(a) For purposes of this rule, the Homosassa River System includes the watercourse from the Homosassa Main Springs Complex to the Gulf of Mexico, including the southeast fork of the Homosassa River, Halls River, Hidden River and all named and unnamed springs that discharge to the Homosassa River.

(b) The Minimum Flow for the Homosassa River System is 95% of the combined natural flow as measured at the United States Geological Survey (USGS) Homosassa Springs at Homosassa Springs, FL Gage No. 02310678, and the USGS SE Fork Homosassa Spring at Homosassa Springs, FL Gage No. 02310688. Natural flow is defined for the purpose of this rule as the flow that would exist in the absence of water withdrawal impacts. The Minimum Flow is based on a 5% reduction from the combined natural flow of 149 cubic feet per second, which was adjusted for groundwater withdrawals using hydrologic modeling for the period of record from October 1, 2000, through October 1, 2018, at the USGS Homosassa Springs at Homosassa Springs, FL Gage No. 02310678 and the USGS SE Fork Homosassa Spring at Homosassa Springs, FL Gage No. 02310688.

(c) Status assessments of the Minimum Flow for the Homosassa River System will be completed to determine whether the flow is below or projected to fall below the Minimum Flow. Each status assessment is independent from and not a determination of water use permit compliance or environmental resource permit compliance. Permit compliance is a regulatory function that is not within the scope of this subsection. As part of each status assessment, the District will use the following approach:

1. The District will evaluate the Minimum Flow annually to determine the extent to which the flow of the Homosassa River System has been reduced due to withdrawals as of the date of each status assessment at the USGS Homosassa Springs at Homosassa Springs, FL Gage No. 02310678 and the USGS SE Fork Homosassa Spring at Homosassa Springs, FL Gage No. 02310688. The annual evaluation will be completed through a review of:

(a) Flow data;

(b) Water withdrawals;

(c) Aquifer water levels;

(d) Rainfall data; and

(e) Hydrologic modeling.

2. The District will also evaluate the Minimum Flow every five years as part of the regional water supply planning process. This evaluation will include the use of hydrologic modeling.

3. If the Minimum Flow is being met based on the annual evaluation or the evaluation performed as a part of the regional water supply planning process, then no further actions are required beyond continued monitoring.

(d) The District will reevaluate the Minimum Flow by December 2029.

(18) Minimum Flow for Gum Slough Spring Run.

(a) For purposes of this rule, Gum Slough Spring Run includes the watercourse from the Gum Slough Springs Group headspring to the Withlacoochee River, including all named and unnamed springs that discharge to the spring run.

(b) The Minimum Flow for Gum Slough Spring Run is 94% of the natural flow as measured at the United States Geological Survey Gum Springs near Holder, FL Gage (Gage No. 02312764), or as measured at any point downstream from this Gage. Natural flow is defined for the purpose of this rule as the flow that would exist in the absence of water withdrawal impacts.

(c) The Minimum Flow for Gum Slough Spring Run also includes a flow-based Minimum Low Flow Threshold of 43 cfs at this Gage. No surface water withdrawal shall be permitted that would individually or cumulatively cause the natural flow to be reduced below the Minimum Low Flow Threshold of 43 cfs.

(d) The District will re-evaluate the Minimum Flow within ten years of adoption of this rule.

(19) Minimum Flow for the Crystal River/Kings Bay System.

(a) For purposes of this rule, the Crystal River/Kings Bay System includes the watercourse from Kings Bay to the Gulf of Mexico, including contributing tributaries, Kings Bay, and all named and unnamed springs that discharge to the river or bay.

(b) The Minimum Flow for the Crystal River/Kings Bay System is a long-term tidally-filtered average flow of 406 cubic feet per second ("cfs") at the United States Geological Survey Crystal River at Bagley Cove near Crystal River, FL Gage ("United States Geological Survey Gage No. 02310747"). The Minimum Flow is based on an 11% reduction from the long-term tidally-filtered average flow of 456 cfs adjusted for groundwater withdrawals for the period of record from 2002 through 2015 at the United States Geological Survey Gage No. 02310747.

(c) Status assessments of the Minimum Flow for the Crystal River/Kings Bay System will be completed to determine whether the long-term tidally-filtered average flow is below or projected to fall below the criteria adopted in this section. Each status assessment is independent from and not a determination of water use permit compliance or environmental resource permit compliance. Permit compliance is a regulatory function that is not within the scope of this subsection. As part of each status assessment, the District will use the following approach:

1. The District will evaluate the Minimum Flow annually to determine the extent to which the long-term tidally-filtered average flow of the Crystal River/Kings Bay System has been reduced due to withdrawals for the period of record from 2002 to the date of each status assessment at the United States Geological Survey Gage No. 02310747.

2. The District will also evaluate the Minimum Flow every five years as part of the regional water supply planning process.

3. If the Minimum Flow is being met based on long-term tidally-filtered average flows adjusted for withdrawals, then no further actions are required beyond continued monitoring.

(d) The District will re-evaluate the Minimum Flow within ten years of adoption of this rule.

(20) Minimum Flows for the Lower Pithlachascotee River.

(a) For purposes of this rule, the Lower Pithlachascotee River in Pasco County, FL includes the watercourse from the bridge across the river at Rowan Road (Pasco County Road 77) to the Gulf of Mexico, and tributaries to the watercourse segment.

(b) Minimum Flows for the Lower Pithlachascotee River are based on the adjusted flow at the U.S. Geological Survey Pithlachascotee River near New Port Richey, FL Gage ("Gage No. 02310300") and are set forth in Table 8-25. Adjusted flow is defined as flow that would exist in the absence of withdrawal impacts. There are two flow-based Minimum Flows that were developed using average four-day flows at Gage No. 02310300 adjusted for withdrawals, with a long-term average of 27 cubic feet per second ("cfs") for the period of record from June 22, 1989 through December 31, 2000. The total reduction in flow from the adjusted flow shall not exceed twenty-five percent of the previous four day's average adjusted flow when the previous four-day's adjusted flow is less than or equal to a Minimum High Flow Threshold of 60 cfs at Gage No. 02310300, and shall not exceed thirty-five percent of the previous four day's average adjusted flow when the previous four-day's adjusted flow exceeds a Minimum High Flow Threshold of 60 cfs at Gage No. 02310300.

Table 8-25 Minimum Flows for the Lower Pithlachascotee River at the U.S. Geological Survey Pithlachascotee River near New Port Richey, FL gage (No. 02310300)

Period	Effective Dates	Where the Adjusted Average Flow for the Preceding Four Days Equals:	Minimum Flow Is:
Annually	January 1 to December 31	≤60 cfs	Previous four day's average adjusted flow minus 25%
Annually	January 1 to December 31	>60 cfs	Previous four day's average adjusted flow

			minus 35%

(c) Status assessments of the Minimum Flows for the Lower Pithlachascotee River will be completed to determine whether the long-term, four-day average flow is below or projected to fall below the criterion adopted in this rule. Each status assessment is independent from and not a determination of water use permit compliance or environmental resource permit compliance. Permit compliance is a regulatory function that is not within the scope of this rule subsection. As part of each status assessment, the District will use the following approach:

1. The District will evaluate flows in the Lower Pithlachascotee River annually to: determine the extent to which the long-term average of four-day average flows in the Lower Pithlachascotee River has been reduced due to withdrawals for the period of record from June 22, 1989 to the date of each status assessment at Gage No. 02310300.

2. The District will also evaluate flows in the Lower Pithlachascotee River every five years as part of the regional water supply planning process.

3. If the Minimum Flows are being met based on the long-term average of the four-day average flows at Gage No. 02310300, then no further actions are required beyond continued monitoring.

(21) Minimum Flows for the Upper Pithlachascotee River.

(a) For purposes of this rule, the Upper Pithlachascotee River in Pasco County, FL includes the watercourse from the outlet of Crews Lake to the bridge across the river at Rowan Road (Pasco County Road 77), and tributaries to the watercourse segment.

(b) Minimum Flows for the Upper Pithlachascotee River are based on the adjusted flow at the U.S. Geological Survey Pithlachascotee River near New Port Richey, FL Gage ("Gage No. 02310300") and are set forth in Table 8-26. Adjusted flow is defined as flow that would exist in the absence of withdrawal impacts. There are three seasonally dependent, i.e., block-specific, Minimum Flows that were developed based on daily average flows at Gage No. 02310300 adjusted for withdrawals, with a long-term average of 27 cubic feet per second ("cfs") for the period of record from June 19, 1989 through December 31, 2000. In addition, the Minimum Flows are flow-based. The Minimum Low Flow Threshold is applied continuously regardless of season. No surface water withdrawal will be permitted that would cumulatively cause the adjusted flow to be reduced below the Minimum Low Flow Threshold of 11 cfs. Additionally, permitted surface withdrawals shall cease when flows are below the Minimum Low Flow Threshold of 11 cfs. In addition, the total reduction in flow from the adjusted flow on any given day from June 24 through October 16 shall not exceed sixteen percent of the previous day's adjusted flow when the adjusted flow is less than a Minimum High Flow Threshold of 50 cfs at Gage No. 023103300 and shall not exceed nine percent of the previous day's adjusted flow when the adjusted flow equals or exceeds a Minimum High Flow Threshold of 50 cfs at Gage No. 02310300.

Table 8-26 Minimum Flows for the Upper Pithlachascotee River at the U.S. Geological Survey Pithlachascotee River near New Port Richey, FL Gage (No. 02310300)

Period	Effective Dates	Where the Adjusted Flow on the Previous Day Equals:	Minimum Flow Is:
Annually	January 1 to December 31	≤11 cfs >11 cfs and <50 cfs ≥ 50 cfs	Actual flow Seasonally dependent – see Blocks below Seasonally dependent – see Blocks below
Block 1	April 25 through June 23	≤11 cfs >11 cfs	Actual flow Previous day's adjusted flow minus 18% but not less than 11 cfs
Block 2	October 17 through April 24	≤11 cfs >11 cfs	Actual flow Previous day's adjusted flow minus 17% but not less than 11 cfs
Block 3	June 24 through October 16	≤11 cfs >11 cfs and <50 cfs ≥50 cfs	Actual flow Previous day's adjusted flow minus 16% but not less than 11 cfs Previous day's adjusted flow minus 9% but not less than 11 cfs

(c) Status assessments of the Minimum Flows for the Upper Pithlachascotee River will be completed to determine whether the

long-term, daily average flow and the daily average flows are below or projected to fall below the criteria adopted in this rule. Each status assessment is independent from and not a determination of water use permit compliance or environmental resource permit compliance. Permit compliance is a regulatory function that is not within the scope of this rule. As part of each status assessment, the District will use the following approach:

1. The District will evaluate flows in the Upper Pithlachascotee River annually to: determine the extent to which the long-term average of the daily average flows of the Upper Pithlachascotee River has been reduced due to withdrawals for the period of record from June 19, 1989 to the date of each status assessment at Gage No. 02310300; and to determine whether daily average flows at Gage No. 02310300 have been reduced below 11 cfs due to surface water withdrawals.

2. The District will also evaluate flows in the Upper Pithlachascotee River every five years as part of the regional water supply planning process.

3. If the Minimum Flows are being met based on the long-term average of the daily average flows at Gage No. 02310300, and based on the determination that surface water withdrawals have not reduced daily average flows at Gage No. 0230300 below 11 cfs, then no further actions are required beyond continued monitoring.

(22) Minimum Flow for the Rainbow River System.

(a) For purposes of this rule, the Rainbow River System includes the watercourse from the Rainbow Springs Group headsprings to the Withlacoochee River, including contributing tributaries, and all named and unnamed springs that discharge to the river.

(b) The Minimum Flow for the Rainbow River System is 95% of the natural flow as measured at the United States Geological Survey Rainbow River at Dunnellon, FL Gage No. 02313100. Natural flow is defined for the purpose of this rule as the flow that would exist in the absence of water withdrawal impacts. The Minimum Flow is based on a 5% reduction from the natural flow of 683 cubic feet per second, which was adjusted for groundwater withdrawals using hydrologic modeling for the period of record from 1965–2015 at the United States Geological Survey Rainbow River at Dunnellon, FL Gage No. 02313100.

(c) Status assessments of the Minimum Flow for the Rainbow River System will be completed to determine whether the flow is below or projected to fall below the Minimum Flow. Each status assessment is independent from and not a determination of water use permit compliance or environmental resource permit compliance. Permit compliance is a regulatory function that is not within the scope of this subsection. As part of each status assessment, the District will use the following approach:

1. The District will evaluate the Minimum Flow annually to determine the extent to which the flow of the Rainbow River System has been reduced due to withdrawals as of the date of each status assessment at the United States Geological Survey Rainbow River at Dunnellon, FL Gage No. 02313100. The annual evaluation will be completed through a review of:

(a) Flow data;

(b) Water withdrawals;

(c) Aquifer water levels;

(d) Rainfall data; and

(e) Hydrologic modeling.

2. The District will also evaluate the Minimum Flow every five years as part of the regional water supply planning process. This evaluation will include the use of hydrologic modeling.

3. If the Minimum Flow is being met based on the annual evaluation or the evaluation performed as a part of the regional water supply planning process, then no further actions are required beyond continued monitoring.

(d) The District will re-evaluate the Minimum Flow by December 2027.

(23) Minimum Flows for the lower Shell Creek.

(a) For purposes of this rule, the lower Shell Creek in Charlotte County, FL, includes the watercourse from the base of the downstream side of the Hendrickson Dam to its confluence with the Peace River.

(b) Minimum Flows for the lower Shell Creek are based on the daily average flow at the United States Geological Survey (USGS) Shell Creek near Punta Gorda, FL Gage, No. 02298202, adjusted for withdrawals and agricultural runoff, for the period of record from January 1, 1972, through December 31, 2018, as set forth in Table 8-27.

Table 8-27 Minimum Flows for Lower Shell Creek Based on flow at the USGS Shell Creek near Punta Gorda, FL Gage Adjusted for Surface Withdrawals from the Shell Creek Reservoir and Agricultural Runoff to the Reservoir.

If adjusted flow in cubic feet per second (cfs) on the previous day is:	Minimum Flow is:
≤ 56 cfs	87% of adjusted flow on the previous day
>56 cfs and ≤137cfs	77% of adjusted flow on the previous day

> 137 cfs	60% of adjusted flow on the previous day

Status assessments of the Minimum Flows for the lower Shell Creek will be completed to determine whether the flow is below or projected to fall below the Minimum Flows. Each status assessment is independent from and not a determination of water use permit compliance or environmental resource permit compliance. Permit compliance is a regulatory function that is not within the scope of this subsection. As part of status assessment, the District will use the following approach:

1. The District will evaluate the Minimum Flow annually to determine the extent to which the flow of the lower Shell Creek has been reduced due to withdrawals as of the date of each status assessment at Gage No. 02298202. The annual evaluation will be completed through a review of:

a. Flow data;

b. Water withdrawals data;

c. Agricultural runoff data;

d. Rainfall and evaporation data; and

e. Hydrologic modeling.

2. The District will also evaluate the Minimum Flows every five years as part of the regional water supply planning process. This evaluation will include the use of hydrologic modeling.

3. If the Minimum Flows are being met based on the annual evaluation or the evaluation performed as a part of the regional water supply planning process, then no further actions are required beyond continued monitoring.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.036, 373.042, 373.0421 FS. History–New 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), 10-16-12, 3-20-13(16), 3-20-13(17), 6-20-16, 3-15-18, 6-19-18, 4-15-20, 8-9-20, 4-12-21, 4-7-22.