

**APPENDIX F— ENVIRONMENTAL VALUES/WATER RESOURCE VALUES
DECISION MATRIX FOR SILVER SPRINGS MFLS BASED ON RULE 62-
40.473, F.A.C.**

Table F1 - Environmental values/water resource values (WRV) decision matrix for Silver Springs and Silver River (Marion County, Florida) based on Rule 62-40.473, F.A.C.

Environmental Value (WRV)	Component	Score	Rationale
Recreation in and on the water	Level of resource risk ¹	1	There are sufficient water depths in the river channel (depth range 10-30 ft) to accommodate recreational use by small to medium-sized watercraft (i.e., canoes, kayaks, and motorized vessels less than 16 ft [Class A]) and larger commercial (ecotourism) and recreational watercraft (i.e., motorized vessels 16 to 26 ft [Class 1] and glass bottom boats [31 ft length] that operate near the main spring boils). Therefore, resource risk is low.
	Importance of resource value ²	3	Significant regional economic importance, including but not limited to recreational outfitters, ecotourism, natural attractions (e.g., Silver River State Park), service providers (e.g., restaurants, gasoline service stations, grocery stores), etc. Therefore, resource importance is high.
	Resource legal constraint ³	3	Silver River and Silver Springs designated as Outstanding Florida Waters (OFW), Rule 62-302.700(9) (i) and Rule 62-302.700(9) (c), F.A.C. Therefore, resource legal constraint is high.
	Screening value ⁴	7	
	Criterion limiting ^{5?}	No	
Fish and wildlife habitats and passage of fish	Level of resource risk ¹	3	Reductions in floodplain inundation and channel (in-stream) velocities may negatively impact ecological structure (e.g., floodplain wetland plant community structure and composition, fish assemblages, hydric organic soils, algal community and in-stream submerged aquatic bed habitat) and functions (e.g., spawning, feeding, refugia for fish and other aquatic species that need access to the floodplain; aquatic fauna community composition and dynamics; in-stream primary productivity). Therefore, resource risk is high.
	Importance of resource value ²	3	Habitats utilized by many faunal species that are state or federally threatened, endangered, or species of special concern (FDEP 2014 - http://www.dep.state.fl.us/parks/planning/SSAdvisory.htm , Table 2). These include the American alligator (<i>Alligator mississippiensis</i>), gopher tortoise (<i>Gopherus polyphemus</i>), the limpkin (<i>Aramus guarana</i>), the little blue heron (<i>Egretta caerulea</i>), the snowy egret (<i>Egretta thula</i>) and the tricolor heron (<i>Egretta tricolor</i>). Federally endangered species include the wood stork (<i>Mycteria Americana</i> , also considered endangered by the FWC), and the Florida manatee (<i>Trichechus manatus</i> , also considered endangered by the FWC). Therefore, resource importance is high.
	Resource legal constraint ³	3	Silver River and Silver Springs designated as Outstanding Florida Waters (OFW), Rule 62-302.700(9) (i) and Rule 62-302.700(9) (c), F.A.C. Therefore, resource legal constraint is high.
	Screening value ⁴	9	
	Criterion limiting ^{5?}	Yes	

Table F1—Continued

Environmental Value (WRV)	Component	Score	Rationale
Estuarine resources	Level of resource risk ¹	1	The St. Johns River Water Supply Impact Study determined that upstream flow reductions allowed by MFLs would have minimal negative impacts to the Lower St. Johns River Estuary salinity regime (SJRWMD 2012b). Therefore, resource risk is low.
	Importance of resource value ²	3	Silver River provides a major portion of the water budget to the Lower Ocklawaha River (especially during dry periods), a major tributary of the Lower St. Johns River. Freshwater discharge event are the source of dilution for oceanic salinities and result in preferred salinity zones with preferred habitats that can affect relative abundance of fish species and distributions of submerged aquatic vegetation in the Lower St. Johns Estuary (SJRWMD 2012b). Therefore, resource importance is high.
	Resource legal constraint ³	1	Flows regulated by upstream (Moss Bluff) and downstream (Rodman) basin structures and defined water control regulation schedules. Therefore, legal constraint is low.
	Screening value ⁴	5	
	Criterion limiting ⁵ ?	No	
Transfer of detrital material	Level of resource risk ¹	2	A significant portion of the detrital material transfer occurs during periods of high water events when accumulated detrital materials on the floodplain are detached from the land surface due to buoyancy or turbulence, and moved by currents. Therefore, maintaining sufficient numbers of flooding events of the river floodplain is essential to the supply and transport of detrital material, and minimizes the potential for risk to this environmental value. Additionally, a significant portion of the detrital material in Silver River is produced directly in the instream channel as submerged aquatic vegetation (SAV) breaks down. Therefore, resource risk is moderate.
	Importance of resource value ²	3	Important source of detrital material transported into the Silver and Ocklawaha rivers to support detrital foodwebs. Therefore, resource importance is high.
	Resource legal constraint ³	3	Silver River and Silver Springs designated as Outstanding Florida Waters (OFWs), Rule 62-302.700(9) (i) and Rule 62-302.700(9) (c), <i>F.A.C.</i> Therefore, resource legal constraint is high.
	Screening value ⁴	8	
	Criterion limiting ⁵ ?	No	

Table F1—Continued

Environmental Value (WRV)	Component	Score	Rationale
Maintenance of freshwater storage and supply	Level of resource risk ¹	3	Consumptive use directly impacts an adequate amount of fresh surface water and groundwater to support non-consumptive uses and environmental values associated with coastal, estuarine, riverine, spring, aquatic, and wetlands ecology. Therefore, resource risk is high.
	Importance of resource value ²	3	This environmental value encompasses all other environmental values identified in Rule 62-40.473 <i>F.A.C.</i> Therefore, resource importance is high.
	Resource legal constraint ³	3	Silver River and Silver Springs designated as Outstanding Florida Waters (OFWs), Rule 62-302.700(9) (i) and Rule 62-302.700(9) (c), <i>F.A.C.</i> Therefore, resource legal constraint is high.
	Screening value ⁴	9	
	Criterion limiting ⁵ ?	No	
Aesthetics and scenic attributes	Level of resource risk ¹	1	There are sufficient water depths in river channel (depth range 10-30 ft) to accommodate recreational and commercial (ecotourism and outfitters) watercraft (i.e., canoes, kayaks, and motorized vessels up to 26 ft [Class 1]) access for scenic and wildlife viewing. Therefore, resource risk is low.
	Importance of resource value ²	3	Significant regional economic importance, including but not limited to recreational outfitters, ecotourism, natural attractions (e.g., Silver River State Park), service providers (e.g., restaurants, gasoline stations, grocery stores), etc. Therefore, resource importance is high.
	Resource legal constraint ³	3	Silver River and Silver Springs designated as Outstanding Florida Waters (OFWs), Rule 62-302.700(9) (i) and Rule 62-302.700(9) (c), <i>F.A.C.</i> Therefore, resource legal constraint is high.
	Screening value ⁴	7	
	Criterion limiting ⁵ ?	No	
Filtration and adsorption of nutrients and other pollutants	Level of resource risk ¹	3	Adequate inundation of the floodplain and maintenance of in-stream channel velocities support ecological structure (e.g., hydric organic soils and plant community composition) and functions (e.g., nutrient assimilation and denitrification) that are essential to the filtration and adsorption of nutrients and other pollutants. Therefore, resource risk is high.
	Importance of resource value ²	3	System is an OFW and Aquatic Preserve. OFW requires no impairment in water quality. Potential increase in algal biomass as a result of nutrient loading. Therefore, resource importance is high.
	Resource legal constraint ³	3	Silver River and Silver Springs designated as Outstanding Florida Waters (OFWs), Rule 62-302.700(9) (i) and Rule 62-302.700(9) (c), <i>F.A.C.</i> Therefore, resource legal constraint is high.
	Screening value ⁴	9	
	Criterion limiting ⁵ ?	Yes	
Sediment loads	Level of resource risk ¹	2	MFLs hydrologic conditions should have minimal impact on the in-stream channel velocities for sediment mobilization and transport. Therefore, resource risk is low.
	Importance of resource value ²	3	Maintenance of in-stream channel velocities critical to sediment mobilization and transport, and maintenance of channel geomorphology. Therefore, importance of resource is high.
	Resource legal constraint ³	3	Silver River and Silver Springs designated as Outstanding Florida Waters (OFWs), Rule 62-302.700(9) (i) and Rule 62-302.700(9) (c), <i>F.A.C.</i> Therefore, resource legal constraint is high.

Table F1—Continued

Environmental Value (WRV)	Component	Score	Rationale
	Screening value ⁴	8	
	Criterion limiting ⁵ ?	No	
Water quality	Level of resource risk ¹	1	Clear issues exist with substantially increased nitrate concentrations in the Silver Springs discharge. However, no important relationships appear to exist between flow rates or water levels and water quality trends in the Silver River (Upchurch et al. 2007; Appendix G). There is no evidence that flow reductions have significant effects on nitrate concentrations. Maintenance of adequate discharge and floodplain inundation events to provide filtration and adsorption of nutrients and other pollutants will protect instream water quality affected by existing and future water withdrawals. Therefore, resource risk is low.
	Importance of resource value ²	3	System is an OFW and Aquatic Preserve. OFW requires no impairment in water quality. Potential increase in algal biomass as a result of nutrient loading. Therefore, resource importance is high.
	Resource legal constraint ³	3	Silver River and Silver Springs designated as Outstanding Florida Waters (OFWs), Rule 62-302.700(9) (i) and Rule 62-302.700(9) (c), F.A.C. Florida's Impaired Waters Rule (Rule 62-303, F.A.C.) identified Silver Springs, the Silver Springs Group, and the Upper Silver River as impaired by nutrients. Therefore, resource legal constraint is high.
	Screening value ⁴	7	
	Criterion limiting ⁵ ?	No	
Navigation	Level of resource risk ¹	1	There are sufficient water depths in river channel and over shallow channel areas to accommodate larger commercial (ecotourism) and recreational watercraft (i.e., motorized vessels 16 to 26 ft [Class 1] and glass bottom boats [31 ft length] that operate near the main spring boils). Therefore, resource risk is low.
	Importance of resource value ²	3	Important recreational boating area. Significant regional economic importance, including but not limited to recreational outfitters, ecotourism, natural attractions (e.g., Theme Park and Silver River State Park), service providers (e.g., restaurants, gasoline service stations, grocery stores), etc. Therefore, resource importance is high.
	Resource legal constraint ³	3	Silver River and Silver Springs designated as Outstanding Florida Waters (OFWs), Rule 62-302.700(9) (i) and Rule 62-302.700(9) (c), F.A.C. Therefore, resource legal constraint is high.
	Screening value ⁴	7	
	Criterion limiting ⁵ ?	No	

- Notes:** 1. Evaluation of the level to which the resource is at risk. Score: 0 = none, 1 = low, 2 = medium, 3 = high
 2. Evaluation of importance of the criterion with respect to resource. Score: 0 = none, 1 = low, 2 = medium, 3 = high
 3. Legal constraints on resource, such as endangered species, Outstanding Florida Water, etc. Score: 0 = none, 1 = low, 2 = medium, 3 = high
 4. Screening value = sum of Resource Risk, Resource Importance, and Resource Legal Constraint scores. Indicates overall importance of criterion to MFLs development.
 5. Evaluation as to whether criterion is potentially limiting for MFLs development. (Y = Yes or N = No)

