Chapter 6: Element d. – Technical and Financial Assistance

CHAPTER 6: ELEMENT D. - TECHNICAL AND FINANCIAL ASSISTANCE

6.1 RESOURCES FOR IMPLEMENTATION OF MANAGEMENT MEASURES BY GOAL

Table 6-1 below describes and organizes the implementation of management measures by goal, as well as identifying the projected timeline for implementation and technical and financial resources for short term goals. There are limitations of trying to identify long-term resources into the distant future. Therefore, partnerships and funding sources will be continually sought.

GOALS	Management Objectives	Timeline	Tech Resources*	Financial Resources*		
A1 CAPTURE FIRST 1.14 INCH OF RAINFALL IN RAINSCAPING PROJECTS to reduce E. coli counts and sediment (TSS) and nutrient (TP & TN) loads from runoff						
a. Define green	1) Green infrastructure systems are defined as strategies to manage stormwater runoff at the local level through the use of natural systems, or engineered systems that mimic natural systems, to treat polluted runoff.	Ongoing	EWG, MBG, MSD	319 funds, MSD, private landowners, private donors		
infrastructure management methods.	2) Rain gardens, bioswales, and bioretention; soil amendments and mulching; stormwater harvesting; lawn alternatives (i.e. replacing lawn grass with deep rooted plants); urban tree protection, tree planting, and urban forest management strategies; rock weirs and filter socks; permeable pavers and green roofs.	Ongoing	MBG, MSD	319 funds, MSD, private landowners, private donors		
b. Engage residential, municipal and commercial audiences in stormwater management.	 Engage residential property owners in managing stormwater. a) Provide financial incentives for voluntary participation in stormwater management through a rainscaping cost-share program. b) Provide technical support for best management practices through online 	Ongoing	MBG, MSD	319 funds, MSD, private landowners, private donors 319 funds, MSD,		
	resources, social media, workshops and webinars.	Ongoing	MSD, RdPWC, MBG	private donors, GRG		

GOALS	Management Objectives	Timeline	Tech Resources	Financial Resources
	c) Support annual citizen engagement projects in the watershed.	Ongoing	RdPWC, OSC, Earthday 365, MBG	MDC, 319 funds, GRG
	d) Involve citizens in local parks maintenance, including tree inventory, tree maintenance and/or tree planting efforts with emphasis on native trees.	Ongoing	Forest Releaf, OSC, Webster Groves, Rock Hill, other munis, MBG	Munis, MDC, 319 funds, GRG,US Forest Service (USFS)
	 e) Encourage downspout disconnections where appropriate. Provide incentives to reroute increased overland flow to rainscaping features. 	Ongoing	MSD	MSD
	2) Support municipalities to implement stormwater management measures.a) Support the development of and implementation of stormwater master plans in each municipality.	1 to 10 years	Consulting firms, MSD, MBG	MSD, Munis, 319 funds
b. Engage residential, municipal and commercial audiences in stormwater management. (cont.)	 b) Support the development of municipal planning and zoning efforts that may include a combination of incentives, ordinances removal of barriers and/or case study implementation. 		Webster Groves, Frontenac, Ladue, Brentwood, Clayton, Creve Coeur	Transportation Alternatives Program (TAP), Munis
	 c) Identify and share model ordinances that impact water quality and stormwater quantity, including local and model urban forest management programs. 	1 to 10 years	EWG, Forest Releaf	TAP, Munis
	d) Support communities in addressing land disturbance of less than one acre to reduce erosion, and/or contain stormwater.	1 to 10 years	Consulting firms	TAP, Munis
	 Assist municipalities in managing parks and existing public lands for stormwater management. 	1 to 10 years	St. Louis County, MBG	GRG, TAP, Munis, 319 funds
	 3) Develop strategies to assist commercial entities to engage as responsible watershed stakeholders. a) Target landscaping companies and horticultural industry to receive education on rain gardens and bio-retention systems. Develop a long-term rain garden maintenance strategy that includes training for landscapers, education for installers, and provide technical assistance. 	1 to 5 years	MSD and co- permittees, MBG	MDC, 319 funds

Management Objectives	Imeline	Tech Resources	Financial Resources
b) Encourage retail to stock/sell LID products: rain barrels and attachments, rain garden kits/instructions, rain garden plants, soil amendments, etc.	1 to 10 years	Home Builders Association (HBA), MSD, Munis, MBG	MDC, 319 funds
 c) Identify invasive plants as undesirable and discourage nurseries from stocking; encourage nursery stocking of native plants. 	1 to 5 years	LREC, MBG, RdPWC	MDC, 319 funds
 d) Encourage use of pervious pavement, permeable pavers, and bio- retention in parking lots. 	10 to 20 years	MSD, Municipal Committee, MBG	MDC, 319 funds
ITIFIED POLLUTANTS AND OTHER IMPAIRMENTS			
1) Identify and prioritize parcels in the watershed needing yard waste and organic debris removal as recommended by watershed municipalities.		MSD Phase II	MSD, Munis
2) Support annual volunteer trash clean-ups locally in the Deer Creek Watershed as well as larger scale in the River des Peres Watershed.	1-5 yrs	OSC, Stream Teams, Munis, MBG	MSD, GRG, MDC, Munis
3) Pilot test the use of aquatic trash collectors.		Maplewood, other Munis, OSC, Missouri Confluence Waterkeeper, Blue2Blue Conservation, GRG, RdPWC, Stream Teams	GRG, MDC, 319 funds
4) Reduce the volume of leaf litter entering streams in the watershed by targeting and educating streamside landowners.		Munis, MGB	319 funds
1) Identify septic systems in the watershed.	1-5 yrs	MSD, MBG	MSD, 319 funds
	 b) Encourage retail to stock/sell LID products: rain barrels and attachments, rain garden kits/instructions, rain garden plants, soil amendments, etc. c) Identify invasive plants as undesirable and discourage nurseries from stocking; encourage nursery stocking of native plants. d) Encourage use of pervious pavement, permeable pavers, and bioretention in parking lots. ITIFIED POLLUTANTS AND OTHER IMPAIRMENTS Identify and prioritize parcels in the watershed needing yard waste and organic debris removal as recommended by watershed municipalities. Support annual volunteer trash clean-ups locally in the Deer Creek Watershed as well as larger scale in the River des Peres Watershed. 3) Pilot test the use of aquatic trash collectors. 4) Reduce the volume of leaf litter entering streams in the watershed by targeting and educating streamside landowners. 1) Identify septic systems in the watershed. 	b) Encourage retail to stock/sell LID products: rain barrels and attachments, rain garden kits/instructions, rain garden plants, soil amendments, etc. 1 to 10 years c) Identify invasive plants as undesirable and discourage nurseries from stocking; encourage nursery stocking of native plants. 1 to 5 years d) Encourage use of pervious pavement, permeable pavers, and bioretention in parking lots. 10 to 20 years TIFIED POLLUTANTS AND OTHER IMPAIRMENTS 1) Identify and prioritize parcels in the watershed needing yard waste and organic debris removal as recommended by watershed municipalities. Ongoing 2) Support annual volunteer trash clean-ups locally in the Deer Creek Watershed as well as larger scale in the River des Peres Watershed. 1-5 yrs 3) Pilot test the use of aquatic trash collectors. 1-10 yrs 1) Identify septic systems in the watershed. 1-5 yrs	b) Encourage retail to stock/sell LID products: rain barrels and attachments, rain garden kits/instructions, rain garden plants, soil amendments, etc. 1 to 10 years Home Builders c) Identify invasive plants as undesirable and discourage nurseries from stocking; encourage nursery stocking of native plants. 1 to 5 years LREC, MBG, RdPWC d) Encourage use of pervious pavement, permeable pavers, and bioretention in parking lots. 10 to 20 years MSD, Municipal Committee, MBG TIFIED POLLUTANTS AND OTHER IMPAIRMENTS 10 to 20 years MSD Phase II Ongoing MSD Phase II 2) Support annual volunteer trash clean-ups locally in the Deer Creek Watershed as well as larger scale in the River des Peres Watershed. 0.5C, Stream Teams, Munis, MBG 3) Pilot test the use of aquatic trash collectors. 1-5 yrs Maplewood, other Munis, OSC, Missouri Confluence Watershed by targeting and educating streams in the watershed by targeting and educating streamside landowners. 1-10 yrs Munis, MGB 1) Identify septic systems in the watershed. 1-10 yrs Munis, MGB

GOALS	Management Objectives	Timeline	Tech Resources	Financial Resources	
b. Reach state water quality criteria for <i>E.</i> <i>Coli</i> levels in Deer Creek by 2040. (cont.)	2) Design and pilot an inspection, maintenance, and replacement cost-share program for septic systems to provide financial incentives to promote voluntary participation.		MBG	319 funds	
	3) Target market septic system cost-share program to streamside landowners with septic systems to identify willing landowners closest to streams for participation.		MBG	319 funds	
	4) Educate private citizens on the importance of picking up pet waste.	1-5 yrs	MBG	319 funds	
	5) Develop and maintain maps of streams, storm sewers and storm sewer outfalls in the Deer Creek Watershed.		MSD Phase II NPDES, MBG	MSD, 319 funds	
	6) Survey the creeks for illicit connections to storm sewers, Illegal dumping, and failing septic systems.		MSD, EPA	MSD	
	7) Implement a program to detect and eliminate illicit discharges.	Ongoing	MSD, EPA	MSD	
	8) Plan for eliminating SSO's and addressing CSO's currently underway as part of the consent decree.		MSD, EPA	MSD	
c. Reach State Water Quality Criteria for Chloride Levels in Deer Creek by 2050.	 Implement brining training/certification programs. 	1-10 yrs	MSD, MBG, Consultants, Munis	319 funds	

GOALS	Management Objectives	Timeline	Tech Resources	Financial Resources
c. Reach State Water Quality Criteria for Chloride Levels in Deer Creek by 2050. (cont.)	2) De-ice with reduced amounts of rock salt.	1-10 yrs	MBG, Consultants, Webster Groves, other Munis	MoDOT, Munis
	3) Upgrade winter maintenance equipment.	1-10 yrs	MBG, Consultants, Webster Groves, other Munis	MoDOT, Munis
	 Use brine/pre-wetting/anti-icing strategies. 		MBG, Consultants, Webster Groves, other Munis, MO Dept. of Transportation (MoDOT)	MoDOT, Munis
	5) Test alternative de-icers.	1-10 yrs	MBG, Consultants, Munis, MoDOT	MoDOT, Munis
	6) Develop municipal salt management plans.	1-10 yrs	MSD, MBG, Consultants, Munis	MoDOT, Munis
	7) Change road design.	15-20 yrs	St. Louis County, MoDOT	MoDOT, Munis
	8) Change salt storage practices.	1-10 yrs	MBG, Consultants, Munis	MoDOT, Munis
	9) Educate private citizens on salt alternatives and other de-icing tips.		MBG, Consultants, Munis	319 funds, Munis

GOALS	Management Objectives	Timeline	Tech Resources	Financial Resources				
B1 MAINTAIN AND IMPROVE THE NATURAL STREAM PHYSICAL STABILITY AND REDUCE STREAM WIDENING AND BANK EROSION								
	1) Assess technical and cost feasibility of regional detention systems.	10 to 15 years	MSD, Munis, engineering firms	MSD, Munis				
a. Assess, implement, and maintain private on site basins.								
	2) Reassess protocols for regional detention maintenance and implement best management strategies.	15 to 20 years	MSD, Munis, engineering firms	MSD, Munis				
b. Capture first 2.5 inches of stormwater runoff to improve channel function & stability.	1) Design and install rainscaping features that capture 2.5 inches of rainfall.		Engineering firms, Frontenac	319, Parks fund, Munis				
	2) Conduct seminars on the mechanics of stream dynamics related to flow for planners, public works staff, and developers.	5-10 yrs	EWG					
	3) Explore opportunities to restore pool-riffle-pool sequences in the creek and tributaries.		Engineering firms, local universities					
	4) Maintain instream flow and explore other opportunities to restore habitat and species diversity.		Engineering firms, local universities, MBG	319 funds				

GOALS	Management Objectives	Timeline	Tech Resources	Financial Resources					
B2 PROVIDE ADI carry large volum	B2 PROVIDE ADEQUATE STREAM BUFFER ZONES (OR STREAM RIPARIAN CORRIDOR) to reduce erosion & sedimentation and to enable stream to carry large volumes of water associated with heavy rains without damage to property								
a. Support preserve or greenway/trail development	1) Construct trails along parts of Deer Creek and its tributaries to provide additional public access to creeks, serve to heighten awareness and interest in the creek and its condition, and highlight water quality management strategies to the general public.	1 to 5 years	GRG, Ladue, other Munis, MBG	GRG, Ladue, other Munis, 319 funds					
along riparian corridors.	Implement Phase I and remaining phases of Deer Creek Preserve with trail along riparian corridor in Ladue.	1 to 5 years	Ladue, MBG	Ladue, 319 funds					
b. Promote invasive species removal and native plant establishment.	 Assess invasive species types and extents along the riparian corridor. Provide invasive species and native plant education Implement ongoing invasive species removal projects, and engage local citizens in removal efforts. Partner with local nurseries to promote native plants. 	Ongoing Ongoing Ongoing Ongoing	MBG, local universities, RdPWC, OSC, Munis, Rainscaping Contractors	MSD, MDC, 319 funds, local foundations, GRG, Munis, landowners					
c. Identify willing landowners located in the floodplain for voluntary purchase/sale and permanent	 Identify and prioritize parcels for purchase in the riparian corridor and set aside development rights in perpetuity as recommended by watershed municipalities. Facilitate the purchase and set-aside of development rights of these properties as prioritized. 	1 to 5 years 1 to 5	Brentwood, other Munis Brentwood, other	Munis, GRG, USACE, Federal Emergency Management Agency (FEMA)					
	3) Use FEMA buyout opportunities to buy back floodplains.	1 to 5 years	University City Great Rivers Habitat Alliance (GRHA), Brentwood, other Munis						
development.	4) Educate FEMA Administrators at municipalities on floodplain development/ redevelopment restrictions (as a tool for opening floodplains).	ongoing	GRHA						
	5) Solicit FEMA and others for additional floodplain buyout funding.6) Explore opportunities to pass municipal ordinances that restrict or eliminate building in the floodplain.	1- 5 yrs 5 to 10 years	Munis, GRHA Munis, GRHA						
d. Support wetland restoration.	1) Establish a wetland arboretum at the corner of Brentwood Blvd. and Marshall Ave.	1 to 5 years	Brentwood, MBG, GRG, MDC, OSC, Rainscaping Contractors, consulting firms	Brentwood, GRG, MDC, OSC, 319 funds					

GOALS	Management Objectives	Timeline	Tech Resources	Financial Resources
d. Support wetland restoration. (cont.)	2) Identify and implement other suitable wetland enhancements.	5 -10 yrs	Other Munis, MBG, GRG, MDC, OSC, FEMA, GRHA	Other Munis, GRG, MDC, OSC, 319 funds, FEMA, U. S. Fish and Wildlife Service (USFWS)
B3 PROTECT GR	OUNDWATER SUPPLIES IN SENSITIVE HIGH KARST AREAS			
a. Prevent sinkhole contamination.	1) Educate private citizens on sinkholes.	1 to 5 years	MBG, MoDNR Geological Survey Program	319 funds
	2) Assess if any sinkholes are currently employed for stormwater drainage.	5 to 10 years	Local citizens, engineering firms	
	3) Redirect stormwater to prevent it from directly draining in sinkholes.	5 to 10 years	Ladue, other Munis	
b. Prevent groundwater contamination.	1) Assess the effectiveness of the incorporation of forbays/underdrains in bioretention systems to prevent groundwater contamination in high karst areas.	1 to 5 years	Local engineering firms, universities	Research grants
C1 EXPAND AND	IMPROVE WATERSHED MODELING EFFORTS			
	a. Model the existing conditions of the watershed as a basis to compare and evaluate proposed improvements or proposed policies.	1 to 5 years	MoDNR, Engineering Firms, MBG	319 funds, EPA research grants
	b. Take into account the high cost of modeling a large watershed and the difficulty of modeling certain impairments.	1 to 5 years		
	c. Use The Simple Model and iTree analysis tools to project and assess effectiveness of pollutant reduction from BMPs and other management measures implemented.	1 to 5 years		
	d. Develop a TMDL for chloride for Black Creek and Deer Creek to determine estimated load reductions and additional management measures needed to attain water quality standards.	1 to 5 years	MoDNR, EPA	MoDNR

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GOALS	Management Objectives	Timeline	Tech Resources	Financial Resources
C2 CONTINUE AN	ID REFINE WATERSHED MONITORING EFFORTS			
	a. Monitor the effectiveness of at least three demonstration BMP's over a 5 year period to inform future efforts. Recalibrate models based upon empirical data.	1 to 5 years	MSD, MBG, WU,SLU	319 funds, research grants
	b. Monitor effectiveness of bioretention systems – underdrains vs. no underdrains.	1 to 5 years	MBG	
	c. Track and make available information on size, scope, location and effectiveness of area BMPs.	1 to 5 years	MSD, EWG	
	d. Assess aquatic and riparian ecotone species diversity.	1 to 10 years	MBG, Stream Teams, Local universities, Nature Conservancy	
	e. Continue ongoing water quality monitoring efforts in Deer Creek and its tributaries.	1 to 5 years	MBG, MoDNR, Stream Teams, LREC, MDC, MSD, United States Geological Survey (USGS)	
C2 CONTINUE ON	IGOING WATERSHED PLANNING			
	a. Utilize the Planting Prioritization Plan to guide the prioritization of watershed projects. See "Identifying Critical Areas" Section 5.4 of Chapter 5.	ongoing	MBG	319 funds, MDC
	b. Convene annual Technical Advisory Group, Community Leaders Task Force, and Steering Committee meetings to get regular stakeholder inputs and keep stakeholders engaged.	ongoing	MBG	319 funds
	c. Update watershed plan every 5 to 10 years or as needed.	5-10 yrs	MBG	319 funds

*See Table 6.2 below for total estimated 319 funding and match needed every three years to implement this plan, and Section 6.3 below for organization abbreviations and additional info. Note, Section 319 funds cannot pay for any NPDES/MS4 permit requirements in a Storm Water Management Program (SWMP) Plan nor capture any of the efforts as nonfederal match towards a 319 project. However, everything above and beyond what is required in a MS4 permit can be supported by 319 and counted as nonfederal match with the appropriate documentation. See Appendix 5-D City of Frontenac Stormwater Master Plan Update 2020 for additional projects not included in these tables to be implemented under City of Frontenac direction.

6.2 TOTAL ESTIMATED 319 FUNDING NEEDED EVERY 3 YEARS

Table 6-2 below provides a three year budget of the total estimated 319 funding and match needed to implement the first phase of this 2022 Deer Creek Watershed Management Plan (Jan. 1, 2023 - Dec. 31, 2025) which is Phase V of the Deer Creek Watershed Initiative. This budget can be adapted and used as a template every three years for implementation of rainscaping BMPs, water quality monitoring and modeling, outreach, administrative, and technical costs as well as other funding sources in relation to Section 319 nonpoint source project planning and implementation efforts within identified priority areas.

Goal or Management Objective Identifier	Tasks or Deliverables Associated with Proposed Watershed Management Objective	Expected Deliverable Units to be Completed	Estimated Load Reductions	Estimated 319 Funding to be Requested	Estimated Matching Partner Contributions	Estimated Other Partner Contributions
A1 & A2	Rainscaping Cost-Share Program BMP Projects	40 BMP Projects		\$130,000	MSD \$100,000 \$120,366 contributed by private landowners	
В2	Wetland Restoration	6.75 Acres Restored	See Table 4-8 on page 4-11 for the estimated number of rainscaping BMPs to be installed in 5-year periods and the minimum estimated load	\$59,500.00	City of Brentwood \$75,000	MDC Land Conservation Partnership Grant \$188,703, GRG \$50,000, OSC \$50,000, & other contributions TBD with up to \$225,000 total from City of Brentwood
В2	Riparian Corridor Plantings	5.38 Acres Planted	reductions for E. coli, sediment (TSS) and nutrients (TP & TN).	\$20,000.00	City of Ladue \$25,000	City of Ladue \$634,000
Total Estin	nated 319 Funding for Rain	scaping BMP Im	\$209,500	\$320,366	\$922,703 to \$1,147,703	

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				Administrative costs including benefits and overhead exceeding 10% of the total 319	
				federal request will be sought	
				from private donors and/or	
Total Estimated 319 Funding for 319 Pr	oject and Rainsc	aping BMP Implementation		provided as	
Administrative and Te	echnical Costs Ex	very 3 Yrs.	\$330,053	match by MBG	
					CSI Project Monitoring
					Plans will be developed
					annually in cooperation
					with MoDNR. Therefore,
					MoDNR will provide
					supplies, lab services, and
	12 compling				technical start support for
	12 Sampling				MoDNR TMDL Unit
	completed and				modeling support was
	load reductions				and will continue to be
Water Quality Monitoring and	modeled	N/A to collect baseline data and			provided as needed to
C1 & C2 Modeling	annually	calculate reductions	\$32,230	MBG Overhead	support this plan.
Total Estimated 319 Funding for Water Qu	ality Monitoring	& Modeling Every 3 Yrs.	\$32,230		

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Multiple	Develop Quarterly Email Newsletters	12 Newsletters		\$3,600	MBG Overhead	
Multiple	Maintain Website and Create New Pages	18 Pages	If at least 5 or one-quarter of the municipalities in the watershed are encouraged to convert to brining through educational efforts every 5 years, this will yield an 11.25% removal rate. In twenty years, if all the municipalities have converted to brining, a 45% removal rate will be achieved	\$5,800	MBG Overhead.	In-kind citizen volunteer and municipal staff hours restoring riparian corridors and removing trash.
A2	Develop Materials, Market, & Host Brining Training Workshop	1 Workshop & Presentation		\$5,100	MBG Overhead	
A1	Develop Materials, Market, & Host Rainscaping Cost-Share Program Orientations	3-6 Orientations & Presentations		\$12,500	MBG Overhead	Private donors \$1,800 for meeting expenses
A1	Order Educational Rainscaping Signs to Place in Yards	20 Signs	chloride removal rates needed will be achieved by educating	\$300	MBG Overhead	
Multiple	Update Facebook Page	36 Social Media Posts	residential landowners in the watershed.	\$700	MBG Overhead	
Total Estimated 319 Funding for Outreach Every 3 Yrs.			\$28,000		\$1,800	
То	otal Estimated 319 Funding I	Needed for all (Costs Every 3 Years	\$599,783	\$403,289	\$924,503 to \$1,149,503

* See Appendix 6A for a narrative of details and tasks associated with this three year budget estimate. In future phases, the additional 319 funding for the wetland restoration and riparian corridor plantings in the first phase should be reallocated to the Rainscaping Cost-Share Program or to other municipal projects identified in this plan with these landowners providing the needed match to allow for additional BMP projects to be installed to achieve load reduction goals. Costs may fluctuate due to inflation and salary increases.

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6.3 TECHNICAL AND FINANCIAL ASSISTANCE FROM KEY PARTNERS

AMERICAN SOCIETY OF CIVIL ENGINEERS

The American Society of Civil Engineers-St. Louis Chapter Water and Environment Sub-Committee will provide technical support for watershed planning and implementation by sponsoring and facilitating Deer Creek Watershed Technical Committee meetings.

EAST-WEST GATEWAY COUNCIL OF GOVERNMENTS

East-West Gateway Council of Governments (EWG) is the regional planning agency for the Greater St. Louis Region. They have an Environment and Community Planning Division and a Geographic Information System (GIS) Division, as well as experience in watershed planning. East West Gateway provides GIS mapping services and background data information and serves on the Deer Creek Watershed Community Leaders Task Force.

GREAT RIVERS GREENWAY DISTRICT

The Great Rivers Greenway (GRG) District has implemented many projects across the region, often in partnership with municipal, governmental, and public agencies, as well as private and nonprofit organizations. The blueprint for The Great Rivers Greenway District is to develop a region-wide system of greenways, parks, and trails that will encircle the region. The 600-mile web of more than 45 greenways, called The River Ring, will span two states and an area of 1,216 square miles that encompass 1.6 million residents. In addition to creating a vibrant, more connected region with thriving green spaces and flourishing natural habitats, new opportunities will result in strong economic development. The Great Rivers Greenway District has funded the implementation of a green infrastructure demonstration project in the City of Maplewood in conjunction with previous Deer Creek Watershed planning efforts. The Great Rivers Greenway District will provide a portion of the funding for the Brentwood Wetland Arboretum Restoration Project included in this Deer Creek Watershed Management Plan. Recommendations for this Brentwood wetland restoration project came out of the Deer Creek Watershed Alliance Technical Advisory Group Metro Wetland Restoration Design Charrette sponsored by GRG in April 2017.

METROPOLITAN ST. LOUIS SEWER DISTRICT

Metropolitan St. Louis Sewer District (MSD) District serves on the Deer Creek Watershed Community Leaders Task Force and Technical Advisory Group, provides funding, creek monitoring data, planning assistance, engineering technical expertise, and implemented and assisted with the monitoring of three demonstration BMPs. In addition, MSD leads regional stormwater NPDES management efforts. Note, Section 319 funds will not be used to pay for any NPDES/MS4 permit requirements in this Storm Water Management Program (SWMP) Plan and none of these efforts will be captured as nonfederal match towards any 319 projects in the watershed. However, all activities being conducted in the watershed to improve water quality are being tracked as part of this planning effort and everything above and beyond what is required in a MS4 permit can be supported by 319 and counted as nonfederal match with the appropriate documentation.

MISSOURI BOTANICAL GARDEN

Missouri Botanical Garden (MBG) manages, staffs, and facilitates the 319 funded Deer Creek Watershed Alliance and all of its activities and watershed planning efforts. In addition, as part of the Missouri Botanical Garden program, the Litzsinger Road Ecology Center conducts a sustainable schools summer workshop for teachers with follow-up field work at the school and at Litzsinger, and supports on-site native planting projects where schools demonstrate interest. Shaw Nature Reserve staff offers rain garden workshops, brochure and web-based rain garden information, and limited technical advice for rain garden installation. A list of recommended native plants for bio-retention systems is posted on the Shaw Nature Reserve website. The Horticulture Division has installed a rain garden near the Kemper Center and has a horticulture answer service who can answer rain garden related questions for the general public. Missouri Botanical Garden also commits resources to direct, facilitate, and provide fiscal services for the implementation of 319 funded projects.

MISSOURI DEPARTMENT OF CONSERVATION

The Missouri Stream Team Program, a partnership of the Missouri Department of Conservation (MDC), coordinates volunteer stream team efforts in the region. The Missouri Department of Conservation's Grow Native program has extensive online resources related to rain garden plants, design, and resources. The Missouri Department of Conservation is interested in providing technical assistance and has agreed to provide replacement plants for demonstration projects. The Missouri Department of Conservation also provides several grant opportunities as well.

MISSOURI DEPARTMENT OF NATURAL RESOURCES & U.S. EPA REGION 7

Funds are available for watershed planning and implementation by US EPA Region 7 through Missouri Department of Natural Resources (MoDNR) under Section 319 of the Clean Water Act. The watershed planning process for the Deer Creek Watershed is partially funded by US EPA Region 7 through the Department of Natural Resources (sub grant number G09-NPS-13 and subgrant number G19-NPS-11), under Section 319 of the Clean Water Act. In addition, Missouri Department of Natural Resources staff provide technical expertise to assist with water quality monitoring as well as watershed planning and implementation efforts.

MUNICIPALITIES IN THE WATERSHED

The cities of Brentwood, Clayton, Creve Coeur, Crystal Lake Park, Des Peres, Frontenac, Glendale, Huntleigh, Kirkwood, Ladue, Olivette, Maplewood, Richmond Heights, Rock Hill, Shrewsbury, Town and Country, University City, Warson Woods, Webster Groves, and Westwood are active participants in the watershed planning process. Most of these municipalities (munis) have a representative participating in the Community Leaders Task Force and all of them have passed a resolution in support of the Watershed Plan Summary. In addition, the cities of Brentwood, Clayton, Creve Coeur, Ladue, Frontenac and Richmond Heights have each conducted their own stormwater master planning efforts. See Chapter 5, Section 5.3 for more information on Local Municipality Stormwater Management Plans.

OPEN SPACE COUNCIL

The Open Space Council (OSC) organizes trash clean up projects, invasive species removal projects, and purchase of undeveloped flood plain or riparian corridor properties for conservation.

RIVER DES PERES WATERSHED COALITION

The River Des Peres Watershed Coalition (RdPWC) engages in cleanups, invasive species removal projects, and planting projects in Deer Creek. The River Des Peres Watershed Coalition tracks and documents rain garden and rain barrel locations in the watershed. In addition, the River Des Peres Watershed Coalition specializes in researching and marketing rain barrels and animal waste composting systems.

U.S. ARMY CORPS OF ENGINEERS

Planning assistance from the U.S Army Corps of Engineers (USACE) is available to the states on a cost-share basis (50-50). Floodplain management would be a candidate for this assistance.

WASHINGTON UNIVERSITY

For the purpose of assisting with this planning effort, Washington University has conducted water quality analyses of data compiled from Deer Creek water quality monitoring to help inform the watershed planning process.

6.4 FINANCIAL ASSISTANCE FOR DEER CREEK WATERSHED -ADDITIONAL RESOURCES

FEDERAL FUNDING OPPORTUNITIES

The EPA.gov site is a resource for potential grant opportunities: http://www.epa.gov/ogd/grants/funding_opportunities.htm.

In addition, Wichita State University is the site of the Environmental Finance Center (EFC) for USEPA Region 7. The Environmental Finance Center Network (EFCN) is a university-based organization with ten centers located throughout the United States at University of Southern Maine, Syracuse University, University of Maryland, University of North Carolina, Chapel Hill, The Michigan Institute of Technology, University of New Mexico, Wichita State University, Earth Island Institute, California State University, Sacramento, and Rural Community Assistance Corporation. The EFC website is <u>https://www.epa.gov/waterfinancecenter/efcn</u>, and it contains more information on the EFC Network and each of its regional centers and funding sources by state <u>https://efcnetwork.org/funding-sources-by-state/</u>.

Additional websites that offer watershed funding search options include EPA's Catalog of Federal Funding Sources for Watershed Protection and EPA's Funding Resources for Watershed Protection and Restoration.

6.5 DIRECTORY OF WATERSHED RESOURCES

Missouri Sources- 28 programs found

Alternative Loan Program Grow Native! Program Missouri Wildlife Habitat Incentives Program (WHIP) Missouri's Aquaculture Program North Central Region(NCR)-SARE Professional Development Program Grant North Central Region(NCR)-SARE Research and Education Grant Program Missouri Agroforestry Program Missouri Stream Team Program Missouri's Forest Keepers Network Community Development Block Grant (CDBG) Other Public Needs, Missouri Community Development Block Grant Program (CDBG) Water and Wastewater, Missouri Delta Regional Authority **Industrial Infrastructure Grant** Energy Revolving Fund Land and Water Conservation Fund (LWCF) - Missouri Living Lands and Waters-Educational Workshops Missouri Brownfields Revolving Loan Fund Recreational Trails Program (RTP) - Missouri Section 319 Nonpoint Source (NPS)- Minigrant Program Section 319 Nonpoint Source Implementation Grant Program - Missouri Adopt-A-Highway Program, Missouri Scenic Byways Program Tools for Floodplain Management Abandoned Well Plugging Program Plant Diagnostic Clinic University of Missouri Center for Agroforestry Missouri Alternatives Center Region 7 Pollution Prevention Regional Information Center