STRATEGIC INVESTMENT PLAN

James River Water Quality Improvement Program

March 2018

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Cover photo: Alex Haney. James River, between Big Island and Buena Vista.

EXECUTIVE SUMMARY

The James River Water Quality Improvement Program Strategic Investment Plan provides Virginia Environmental Endowment (VEE) with a guide for determining grant support for those proposals which will make a significant impact on the water quality of the James River. With the benefit of extensive input of conservation partners from local, state and federal government, academia, and non-profits, the Plan presents strategies that reflect VEE's priorities for the James River Water Quality Improvement Program. VEE intends to target investments to:

Accelerate the restoration and improvement of water quality in the James River watershed to Clean Water Act standards from its Virginia headwaters to the Chesapeake Bay, with consideration to improving the water quality in the greater Jamestown region.

While progress has been made across the James River watershed in addressing legacy pollution stemming from runoff from agricultural and urban lands, water quality threats persist. With every storm event, runoff across the land carries with it nutrients, bacteria, and sediments, aiding in the transport of these pollutants, as well as PCBs and other chemicals, to the James River, its tributaries, and the Chesapeake Bay.

Undergirding the priorities set forth in this Plan is a geospatial analysis of the James River watershed, funded by VEE and conducted by the Chesapeake Conservancy's Conservation Innovation Center. The result of this analysis is a precision conservation mapping tool (the Restoration Planner) that shows the hydrologically connected areas or flow paths through which pollution is more easily conveyed to waterways. These restoration opportunity areas allow for targeting the placement of conservation practices and interventions that will significantly improve water quality across the James River watershed.

The Strategic Investment Plan targets five pollutants that impact water quality in the James River watershed: nitrogen, phosphorus, sediment, bacteria, and polychlorinated biphenyls (PCBs). A suite of strategies identified for implementation target these pollutants from agricultural and stormwater runoff, streambank and shoreline erosion, failing septic systems and illicit discharges, and PCB contamination that has impacted fish consumption opportunities.

Across all strategies, the implementation of forested and vegetated riparian buffers is a priority given their ability to protect water resources by reducing polluted runoff entering streams and rivers and enhancing the overall ecological function of the receiving waters. A number of co-benefits are anticipated to occur in response to water quality improvements as well, including the improvement of habitat, species success, public health gains, and the overall resiliency of the James River watershed.

The Plan provides a brief summary of the current water quality threats, the rationales for selecting certain recommended strategies, an implementation plan and an identification of initial funding priorities.

NEED

Home to one-third of Virginia's population and encompassing nearly 25% of the Commonwealth's land mass, the James River watershed emanates from headwaters in prolific, native trout streams in Bath, Highland, and Allegheny counties. Traversing the state from west to east, small tributaries feed into larger river systems, supporting fertile farm valleys and productive floodplain wetlands adjacent to small towns and mid-sized cities. As tributaries flow to the James River main stem, they collectively become the southernmost great river to empty to the Chesapeake Bay, a renowned historic, ecological, and cultural treasure. The 340 mile James River is Virginia's largest and longest waterway, with 15,000 miles of tributaries lacing 10,236 square miles of land, replenishing drinking water for its three million residents and serving as the economic engine, generating power and supporting community livelihoods: agriculture, industry, and commerce.

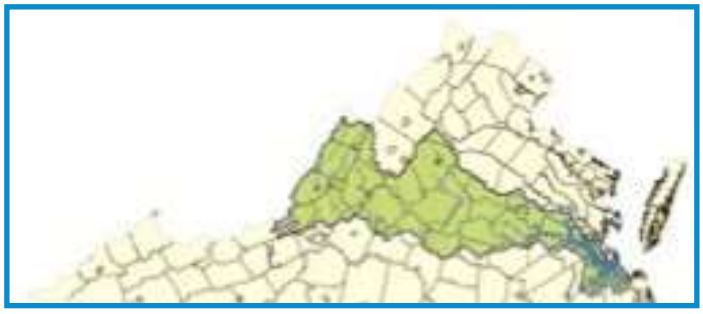


FIGURE 1 PROXIMITY MAP OF JAMES RIVER WATERSHED

In Fall 2017, the James River Association's biennial *State of the James* report upgraded the river's overall health to a "B-," noting that improvement is juxtaposed with the vast need for continued and increased diligence to fully restore the James. Extensive ecosystem services are provided by the James River and its tributaries: drinking water; recreation; food, fuel and fiber; electric power; flood control and retention; and many other community

benefits. A diversity of fish and wildlife include great migratory fish like the American sturgeon, river herring and shad; all are dependent upon connected waters for outstanding habitat. In the high quality, cold-water headwaters, native trout species thrive.

To advance water quality improvements, this Strategic Investment Plan targets five pollutants with historic and current impacts to the James River watershed: nitrogen, phosphorus, sediment, bacteria, and polychlorinated biphenyls (PCBs).

Nutrients, Bacteria, and Sediment. The largest contributions of nutrients and bacteria to the James River and its tributaries are attributable to human and agricultural activities, the former by way of municipal wastewater treatment plants (direct, regulated discharges), poorly performing septic systems, and the continued existence of "straight pipes" (illegal direct discharges of raw sewage from a household or other building). The sources of both nutrients and bacteria from agriculture includes animal manures; commercial fertilizers are also a significant source of nutrients. At the household and commercial property level, the overuse of lawn fertilizers is also an input to the nutrient loads in the James River Basin. To a lesser extent, domestic animals and wildlife are identified through bacterial source tracking as the culprit for some bacterial impairments of streams and localized algae blooms.

Sediment pollution stems from a wide range of human activities on the landscape, particularly where land disturbances occur, like construction and development and agricultural practices that disturb soils. With the return of a culture promoting the importance of soil health at the farm-scape, farmers remain some of the greatest proponents for protecting and conserving the soils they farm, understanding the critical role retained soils have for growing food, cycling and retaining nutrients, and increasing overall profitability.

However, physical changes in stream and river systems due to the increasing volume and veracity of stormwater, dredging, hardening of shorelines, natural wave action, and other disturbances have de-stabilized shorelines and stream banks causing millions of pounds of sediment to be lost to waters each year. The impact of the increased instream sediment load that carries with it other pollutants is diminished habitat and threats to fish, shellfish, and other aquatic life. The disconnect of rivers and streams from their floodplains has reduced nature's resiliency, increasing the conveyance of stormwater directly to waterways, as floodplains and wetlands can no longer serve as sponge areas, regulating floods and protecting downstream communities from the onslaught of high volumes of water and sediments.

What are the greatest threats to water quality in the James River watershed? Nutrients (nitrogen and phosphorus), sediments, chemicals (road salts, pesticides, coal ash), legacy contaminants (Kepone, mercury, PCBs, TBT), invasive species, alterations of the natural stream and river channels that diminish their capacity to process pollution.

What are contributing factors to these threats? Polluted runoff from farms and lack of on-farm conservation; stormwater runoff from increasing impervious surfaces, roads neighborhoods, commercial areas, and suburban lawns; pet wastes; improperly functioning septic systems; shoreline and stream bank erosion; the loss of in-stream ecological processing; industrial and illicit discharges (including leaking coal ash ponds, catastrophic spill events, and "straight pipes"); dams and impoundments; dredging; unmanaged forest harvests; and consumptive water use.

Forty-four localities within the James River watershed hold regulated permits for stormwater discharges, each with increasing pressures to improve infiltration and reduce the volume of stormwater discharged to local waters. The hundreds of non-regulated localities within the James River watershed face their own stormwater challenges as increasing storm events in both intensity and volume of water have heightened local flooding and conveyance of land pollutants to streams and the River. Their ability to compete for stormwater management resources is difficult given the competitive advantage held by the regulated localities for the same state and federal resources and the limited or non-existence of state resources in recent years.

The collective impact of agricultural, urban, and suburban contributions of nutrients, bacteria, and sediments impair local streams and rivers, and contribute to impacting the critical habitat and water quality in the lower James and Chesapeake Bay. In the lower James, underwater grasses providing essential habitat are on the decline and the James River Basin's contribution to dissolved oxygen depletion in the Chesapeake Bay is well documented.

Polychlorinated Biphenyls (PCBs). The entire main stem of the James River and nearly all of the tributaries of the Lower James have a fish consumption advisory due to the presence of polychlorinated biphenyls (PCBs). Banned nearly four decades ago, PCBs are ubiquitous in the environment and show no indication of decline. While there are a variety of sources and pathways for PCBs to enter the environment, their persistence in

the River and its tributaries are attributable in part to stormwater runoff contaminated by air deposition of PCBs or contaminated sites. Stormwater practices designed to reduce nutrients and sediments are believed to have the secondary benefit of removing PCBs as they bind to sediments

The Virginia Department of Environmental Quality (DEQ) is currently working to develop a PCB TMDL by 2022. For vulnerable populations – those who are either planning to become pregnant, currently pregnant, or nursing as well as young children – no fish should be consumed from most of the James River. The Virginia Department of Health (VDH) communicates fish advisories to other Virginia agencies. Postings in public fishing areas communicate the risk and allowable exposures; local organizations working to protect their communities also spread the word. However, there is an overall sense that the public is relatively unaware of the advisory and its implications. Furthermore, there is an enormous disconnect between the allowable levels of PCBs in the environment versus the concentrations in fish flesh that negatively impact human health. While soils that are below a 50ppm threshold are considered free of PCBs, the human consumption risk is exponentially lower, at 10 – 15 parts per quadrillion. DEQ work to fingerprint the 209 types of PCBs to better assess and target the sources is underway and being piloted in the New River Valley, but the costs of sampling are high and currently underfunded. Biosolids, legally applied to agricultural fields in the Commonwealth, are regulated federally to ensure that PCBs levels are below 50ppm, again a mismatch of policy with the science of contamination and the levels bioaccumulated in fish flesh that can impact human health.

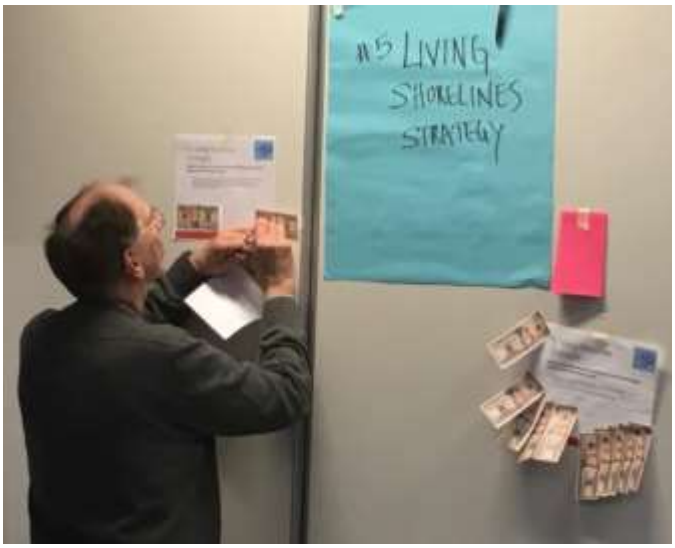
Other Considerations. VEE's Advisory Team to the new James River Water Quality Improvement Program identified a wide range of salient water quality challenges for the James River watershed, including threats that will not be addressed by the strategies put forth in this Plan (see sidebar titled "What are the greatest threats to water quality in the James River"). To the extent possible, the approach advanced in this Plan addresses water quality improvement opportunities that can be accelerated or approached with strategies that will reduce pollutant loads in a cost effective manner, especially in response to water quality challenges for which current regulatory or corporate responsibility is not at play. VEE understands that, while $15.595 million is a significant amount, the funding needs are much greater if the James River's water quality is to be fully restored.

Why focus on PCBs when there are other toxic chemicals present in the watershed?

According to VA DEQ, unlike PCBs, Kepone, mercury, and dioxin are declining in fish flesh over time, attributed to heightened regulation or elimination of these compounds.

TBT, tributyltin, a highly toxic biocide, is a chemical of concern in the lower James. Virginia Institute of Marine Science is developing an analytic method for evaluating the presence and risk of TBT in the lower James, but currently there are not implementable actions for addressing this threat.

Coal ash discharges from Virginia's power industry contain heavy metal contaminants including mercury, cadmium, and arsenic. Coal ash discharges pose potential and serious threats to the James River watershed, and require due diligence by the corporate entities and regulatory agencies to reduce this risk. As of 2018, there are regulatory and corporate entities responsible for preventing contamination of the James River from this source.



ADVISORY TEAM MEMBER WEIGHS IN ON THREATS, OPPORTUNITIES, AND PRIORITIES FOR IMPROVING WATER QUALITY IN THE JAMES RIVER WATERSHED

DESIRED OUTCOMES

The overarching goal of the James River Water Quality Improvement Program is to:

Accelerate the restoration and improvement of water quality in the James River watershed to Clean Water Act standards from its Virginia headwaters to the Chesapeake Bay, with consideration to improving the water quality in the greater Jamestown region.

Over a ten-year period (2018-2027) this program will invest $15,595,000* in strategies focused on removing pollution loads and potential contaminants that threaten water quality in the James River and its tributaries. Table 1 summaries the desired outcomes for each of these strategies, which revolve around agriculture, stormwater management, stream restoration, living shorelines, septic system and illicit discharge remediation, and PCB capture.

In addition to these strategies, VEE will establish a Strategic Investment Opportunities Set-Aside that it will utilize to target funds to additional water quality improvement opportunities that arise over the life of this new grant program.

While water quality improvement to meet Clean Water Act standards is the key outcome sought, expected co-benefits of the strategies include improved aquatic habitat; improved structure, function and resiliency of streams and rivers and their floodplains; and conservation of the region's native flora and fauna.

*The $15,595,000 are mitigation funds collected by the state and federal governments as part of a mitigation agreement covering utility line construction across the James River downriver of Jamestown.

TABLE 1

JAMES RIVER WATER QUALITY IMPROVEMENT PROGRAM DESIRED OUTCOMES BY STRATEGY CATEGORY

DESIRED OUTCOMES
AGRICULTURE Achieve accelerated removal and reduction of nutrient and sediment pollutant loads and bacterial inputs stemming from agricultural working lands, polluted runoff from farm operations, and legacy agricultural practices.
STORMWATER MANAGEMENT In the Area of Potential Effects (APE), achieve accelerated removal and reduction of nutrient and sediment pollutant loads in urban landscapes including commercial, industrial, and residential neighborhoods.
STREAM RESTORATION Achieve accelerated removal and reduction of nutrient and especially sediment pollutant loads by improving stream functionality and health, including buffering capacity and hydrologic connectivity to floodplain and wetlands.
LIVING SHORELINES Reduce erosion at priority shoreline management sites through the re-establishment of natural shoreline and increased coastal resiliency to waves, rising water elevations, and shoreline development.
SEPTIC SYSTEMS/ILLICIT DISCHARGES REMEDIATION In the Area of Potential Effects (APE), achieve accelerated removal and reduction of nitrogen pollutant loads and bacterial contamination from illicit discharges of domestic wastes to local waters ("straight pipes") or due to septic failure, in areas within which a bacterial TMDL is in effect.
PCBs Disrupt the movement of PCBs from land to waters of the James River in a targeted area and in sequence with stormwater management strategies for the interim period prior to the VA DEQ release of PCB-based TMDLs.

GEOGRAPHIC FOCUS

James River Water Quality Improvement Program investments will target priority restoration opportunity areas situated in Upper-, Middle-, and Lower James River, including the Area of Potential Effects (APE)*, which is comprised of the greater Jamestown region, including both the north and south banks of the James River (Figure 2). The APE was designated as a focus geography on the basis that it is in visual proximity to the transmission lines that are being installed across the James River, and includes roughly 23 square miles of shoreline in addition to the main river channel.

The specific restoration opportunity areas will be refined by project partners (grant applicants) and informed by the Chesapeake Conservancy's Restoration Planner conservation mapping tool that defines flow paths to a 1-meter resolution where heightened potential for pollution load reductions are anticipated with appropriate selection, placement and implementation of restoration practices.

*The mitigation agreement covering the utility line construction across the James River downriver of Jamestown defines the APE.

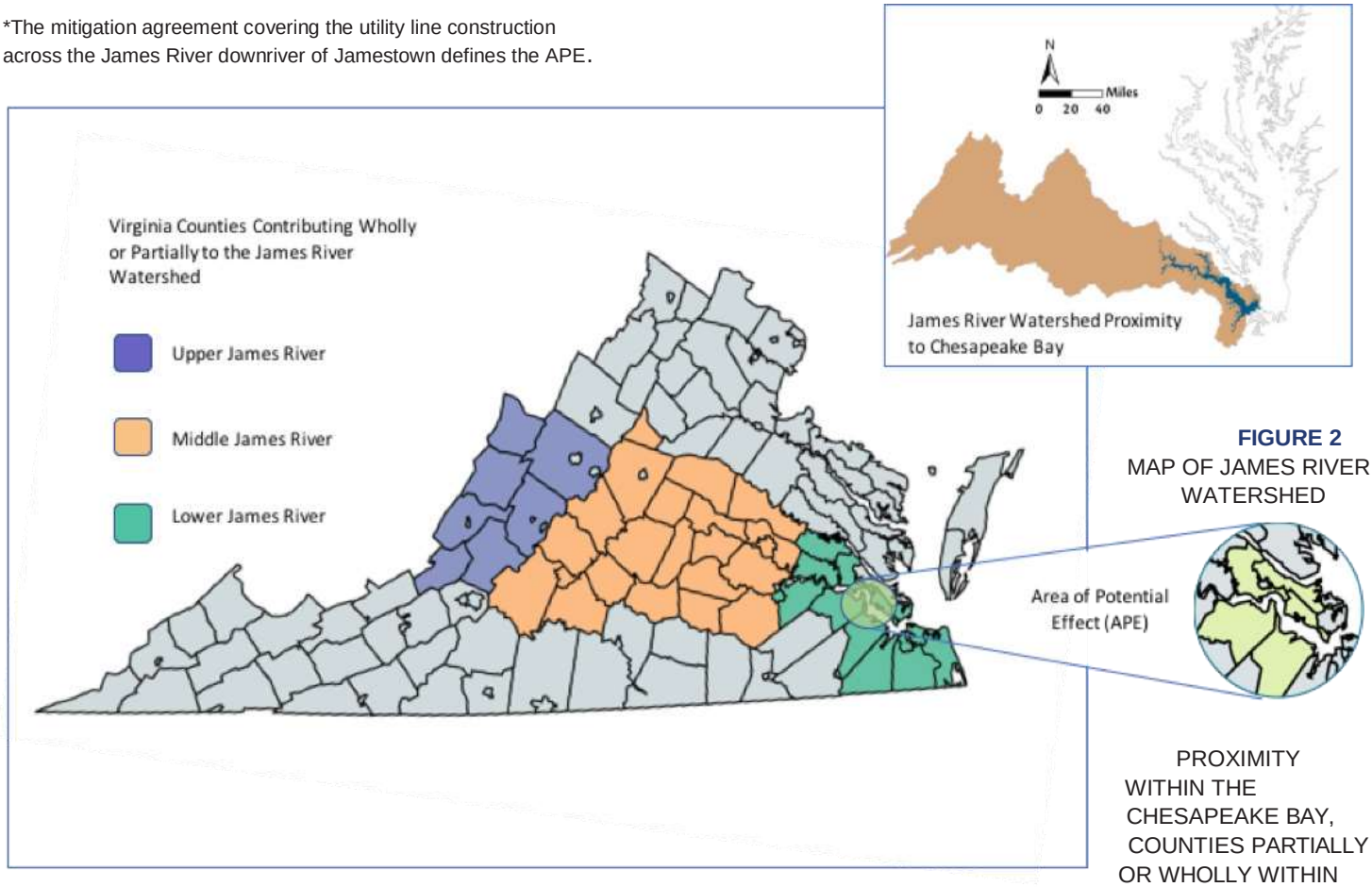


FIGURE 2
MAP OF JAMES RIVER WATERSHED PROXIMITY WITHIN THE CHESAPEAKE BAY, COUNTIES PARTIALLY OR WHOLLY WITHIN THE UPPER-, MIDDLE-, AND LOWER JAMES RIVER AREAS DISCUSSED IN THIS PLAN, AND THE PROXIMITY OF THE AREA OF POTENTIAL EFFECTS (APE). MAP SOURCES: UMCES IAN AND MAPCHART.NET.

Table 2 (see next page) describes each of the four areas of the James River watershed where restoration strategies will focus and the municipal divisions within each, including:

- Upper James
- Middle James
- Lower James
- Area of Potential Effects (APE)

Table 3 (see next page) highlights which of the restoration strategies will receive priority in which of the four areas. These priorities may be further refined with use of the Chesapeake Conservancy's precision conservation mapping tool, the Restoration Planner.

TABLE 2 JAMES RIVER REGIONS CATEGORIZED FOR STRATEGIC INVESTMENT PLAN

James River Regions Defined for the Strategic Investment Plan	Cities/Counties (wholly or partially within the James River Basin)
Upper James Primarily Blue Ridge and the Valley and Ridge, emanating from West Virginia, and beginning in Alleghany County, Virginia, easterly to the western edge of Piedmont.	Cities of Buena Vista, Covington, Lexington; Counties of Alleghany, Augusta, Bath, Botetourt, Craig, Giles (very small area) Highland, Montgomery and Roanoke (very small areas); and Rockbridge
Middle James Primarily Piedmont, upstream of the fall line and extending to the western most boundary of the Piedmont zone.	Cities of Charlottesville, Lynchburg, Richmond; Counties of Albemarle, Amelia, Amherst, Appomattox, Bedford, Buckingham, Campbell, Chesterfield, Cumberland, Dinwiddie, Fluvanna, Goochland, Greene, Hanover Henrico, Louisa (very small area), Nelson, Powhatan, Prince Edwards, and Nottoway.
Lower James Primarily Coastal Plain, below the fall line, east of Richmond, extending to the Chesapeake Bay. The Lower James also includes the Area of Potential Effect (APE, defined below)	Cities of Colonial Heights, Hampton, Hopewell, Newport News, Norfolk, Petersburg, Portsmouth, Virginia Beach, Williamsburg; Counties of Charles City, Chesapeake, Isle of Wight, James City, New Kent, Prince George, Suffolk, and Surry.
Area of Potential Effects (APE) The area is approximately 10 miles upstream and 13 miles downstream of the proposed transmission line river crossing, and 0.5 miles inland from the shoreline, roughly 23 mi^2 land area and the James river main stem. The APE was designated by the US Army Corps of Engineers.	Portions of the Cities of Hampton and Newport News as well as portions of the Counties of Isle of Wight, James City, Surry, and York.

TABLE 3 FOCUS GEOGRAPHIES FOR RESULTS-BASED TARGETING

Desired Outcomes	Potential Focus Areas by Strategy	Upper James	Middle James	Lower James	APE
Achieve accelerated removal and reduction of loads of nutrients and sediments and bacterial inputs to support healthy local waters and restoration of the Chesapeake Bay.	Agriculture	X	X	X	
	Stormwater Management	X	X	X	X
	Living Shorelines			X	X
	Stream Restoration	X	X	X	
	Septic Systems/Illicit Discharges Remediation				X
Reduce the amount and effect of PCBs on the James River and its tributaries.	Stormwater Management prior to TMDL Issuance			X	X

IMPLEMENTATION PLAN

The strategies presented below are designed to produce individual and collective, measureable, water quality improvements. In tandem with enhanced project site selection informed by the Restoration Planner, the implementation of the suite of strategies offered is expected to result in improved placement of the right practice at the right location, netting accelerated pollution load reductions. In addition, critical co-benefits including improved habitat; increased structure, function and resiliency of streams and the River and its floodplains; and conservation of the region's native flora and fauna are possible.

IMPORTANT NOTE: Riparian buffers, forested and vegetated, on and adjacent to streams and flow paths are a keystone practice in this program. Thus, the Plan lists them as priority funding opportunities in all land-based strategies. The Chesapeake Conservancy's Resource Planner will identify and prioritize restoration opportunity areas adjacent to previously unmapped flow paths where contiguous buffers will result in the highest load reduction of nutrients and sediments.

IMPORTANT NOTE ON INITIAL FUNDING PRIORITIES FOR 2018 – 2019

During the initial year of the James River Water Quality Improvement Program, VEE will prioritize its investments in four of the identified strategies: riparian buffers; improved technical assistance; living shorelines; and stream restoration.

IN THE APE, ONLY, VEE will additionally prioritize strategies for stormwater management and septic systems/illicit discharges remediation.

These initial funding priorities are bolded and designated with an * in the "Implementation Plan" descriptions.

1. **Agricultural Strategy.** Support projects that accelerate removal and reduction of nutrient and sediment pollutant loads and bacterial inputs stemming from agricultural working lands, polluted runoff from farm operations, and legacy agricultural practices.

   1.1. *** Riparian Buffers. Invest in riparian forested buffers as a priority, and other vegetated buffers on agricultural lands where restoration opportunities are highest based on the flow path analysis generated by the Resource Planner. Support the use of precision conservation practice placement to target the best location for riparian forested and vegetated buffers, wetland enhancement and restoration, and supporting agricultural practices. Prioritize permanent protection and long term maintenance to any buffer proposal.**

   1.2. *** Improved Technical Assistance to Accelerate Implementation of Agricultural Pollution Reduction Practices. Support sustainable regional or multi-jurisdictional technical assistance programs, particularly for soil and water conservation districts, in areas of high agricultural intensity to accelerate the delivery and implementation of cost-effective farming practices that improve and provide permanent protection of water quality. Include consideration of investments in proposals that provide administrative support for technical assistance providers in order to increase the amount of time they have to work with farmers and landowners in implementing practices that reduce agricultural pollution.**

   1.3. **Whole Farm Systems Approach.** Support work with farmers and landowners to establish and implement a comprehensive suite of on-the-ground pollution reduction measures designed to minimize and manage polluted runoff from all areas of the farm.

   1.4. **Innovative Technologies.** Encourage improved access to and delivery of innovative or underutilized, high impact on-the-ground practices such as precision nutrient management that drive down the need for and use of additional fertilizers and generate water quality improvements. Where innovations or improvements in conservation districts or custom operator provision of services can drive down costs, explore shared equipment or processes for maximizing regional deployment of technologies.

2. **Stormwater Management Strategy.** Given the limited dollars available, focus stormwater related investment strategies in the APE. Seek to accelerate removal and reduction of nutrient and sediment pollutant loads in urban landscapes including commercial, industrial, and residential neighborhoods.

   2.1. *** Buffers. In the APE, invest in forested and vegetative riparian buffers as a priority within urban and suburban landscapes and as informed by local and regional stormwater plans and permits. Proposals should utilize the Resource Planner to target the best location for maximizing reductions of stormwater volume and pollutant loads through buffer implementation in urban and suburban landscapes.**

   2.2. *** Technologies. In the APE, support cost effective projects consistent with targeted, strategic local and regional stormwater management plans that are part of larger efforts (as opposed to isolated, one-off projects).**

3. **Stream Restoration Strategy.** Support accelerated removal and reduction of nutrient and especially sediment pollutant loads by improving stream functionality and health, including buffering capacity and hydrologic connectivity to floodplain and wetlands.

   3.1. *** Riparian Stream Buffers. Invest in establishing permanent forested and vegetated buffers in headwater streams, focusing on stream restoration without costly stream channel designs. Maximize potential for stream restoration through designs that over time restore natural stream flow paths and reestablish stream flow connections with the floodplain.**

   3.2. *** Co-location of Restoration with Other Strategies. Where possible, support stream restoration in parallel with or following other contiguous water quality improvement efforts.**

   3.3. **Reconnection of Stream to Floodplains.** Improve or restore natural stream hydrology and connectivity to floodplains, reducing streambank erosion and scouring while increasing storage, infiltration, and filtering capacity of the system.

4. **Living Shorelines Strategy.** Support proposals in the tidal James which reduce erosion at priority shoreline management sites through the re-establishment of natural shorelines that, in turn, improve coastal resiliency to wave energy, higher water elevations, and shoreline stability.

   4.1. *** Construction of Living Shorelines. Encourage the use of VIMS "Virginia Shoreline and Tidal Marsh Inventory" and other county-level shoreline management plans to select the priority opportunity areas for addressing sediment loss through the construction of living shorelines, including: 1) nature-based living shorelines for low-energy areas, including the placement and enhancement of non-structural practices, e.g. riparian buffers and marsh buffers; and 2) marsh sills and living reef breakwaters where wave energy dissipation is critical and additional protection necessary for wave attenuation to minimize erosion potential.**

OYSTER REEF RESTORATION

The James River is the historic home of acres of native oyster reefs; parts of the APE are among these historic sites. Oyster reefs are proven mechanisms for the removal of nutrient and sediment pollution. While the Chesapeake Bay Program Partnership has placed a priority on oyster reef restoration in specific regions and rivers, the James is not one of them. Thus, there is a gap in the availability of funds for James River oyster reef restoration. Proposals for investments in James River oyster reef restoration would require permanent preservation of the reef and restrictions on harvesting.

5. **Septic Systems/Illicit Discharges Remediation Strategy.** In the APE, support accelerated removal and reduction of nitrogen pollutant loads and bacterial contamination from illicit discharges of domestic wastes to local waters (e.g., "straight pipes") or due to septic failure, in areas within which a bacterial TMDL is in effect.

   5.1. *** Remediation Programs. In the APE, target support where possible to economically distressed areas and encourage approaches that repair illicit discharges, connect the households to local public sewer or install new or replacement septic systems.**

6. **PCBs Strategy.** Disrupt the movement of PCBs from land to waters of the James River in a targeted area and in conjunction with stormwater management strategies for the interim period prior to the VA DEQ release of PCB-based TMDLs.

   6.1. **Green Stormwater Infrastructure (GSI) in Priority PCB Areas.** Identify sites where land conversion and historic industry conditions are connected to past PCB generation as an industrial product, by-product, in storage, use, or waste. In coordination with local governments, identify bioretention opportunities for the capture and retention of sediments in PCB areas to reduce the risk of contamination of local waters. Upon the establishment of a PCB TMDL by VA DEQ, re-evaluate to consider PCB pollution abatement options for enhanced removal.

Strategic Investment Opportunities Set-Aside. The new James River Water Quality Improvement Program will incorporate a Strategic Investment Opportunities Set-Aside fund that will be available to support strategic, innovative projects not identified in this Plan that VEE concludes will result in significant water quality improvements. Funds for such opportunities for enhanced restoration that emerge within the 10-year duration of the James River Water Quality Improvement Program will be available from this Set-Aside. Proposals will need to demonstrate significant water quality improvements and cost-effectiveness.

MONITORING AND EVALUATING PERFORMANCE

VEE will work with its grant partners to assess and track program performance and the resulting water quality outcomes primarily at the proposal implementation level.

VEE will review grantees' proposed metrics and will look for consistency with established standards and protocols for monitoring and evaluating performance. In order to maximize investments in the implementation of water quality improvements, VEE funds will not be available for monitoring project outcomes.

LEVERAGING OPPORTUNITIES

A range of opportunities for leveraging VEE resources are possible through the state including the Virginia Department of Conservation and Recreation's agricultural cost-share program and the Department of Environmental Quality's stormwater local assistance financing (as funding is made available). In addition, the federal 319 program administered by the state can support strategies that address local TMDLs including riparian buffers, stream restoration, and failing septic systems/illicit discharges remediation. Federal resources through USDA Farm Bill cost share programs can also be utilized where available. National Fish and Wildlife Foundation's Chesapeake Bay Stewardship Fund is an important source of potential funding for leveraging through its Small Watersheds Grants and Innovative Nutrient and Sediment Reduction Grants.

Private foundations in Virginia and beyond may also be sources for obtaining leveraging.

While VEE will not require match for the investments made in this program, the Endowment strongly encourages the leveraging of its James River grant resources with public or private funding to support the accelerated and increased delivery and implementation of the strategies identified in this Strategic Investment Plan and contained in any proposal.

VEE will preferentially review proposals that leverage its James River grant funds.

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