	Phase 3 Wate	rshed Implementatio	on Plan (WIP)	Progress and	Milestones						2020 Progress Update	
		<u>Green</u> - action has	been completed	or is moving forw	vard as planned	Yellow - action has encountered minor obstacles			Red - action has not been taken or has encountered a serious barrier			
Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources	<u>Available</u>	Resource	es <u>Needed</u>	Progress to Date	
							Technical	Financial	Technical	Financial		
rior	ity Initiative 1: Pr	ogrammatic, Polic	cy and Regul	atory Chang	ges							
1.1	Integrate Chesapeake Bay planning efforts with county planning through dedicated personnel available to support local goals implementation and address capacity issues on a county by county basis	Organizational chart for all participating entities with roles and responsibilities developed and shared with county planning teams to accompany where to turn for help guide; State level staff hired; Necessary information identified for exchange, reporting criteria and schedule for reports established and data verification process identified;	EPA/DEP/SRBC /PRBC and counties/muni cipalities	Chesapeake Bay region	2022	Integrated staff – should be at DEP level but with frequent interaction and collaboration with county staff. 2-3 staff at DEP for administration of program and at least one dedicated staff for Franklin County. Other counties may require more or less staffing based on pollution reduction goals. Counties are not one size fits all; program needs to recognize and provide support for plan implementation for county's unique needs	None	None	Staff will need to be hired to lead and coordinate the WIP effort	State and local funds sufficient for staffing	 11/25/2020 Update: CCWAP Coordinator was hired through Franklin County Conservation District (FCCD and began February 19, 2020. Funds for the position were secured through DEP's CCWAP Coordinator Grant. Coordinator developed a Steering Committee consisting of members across all sectors, municipalities, focus areas, skills, and resources. These members have organically grouped into subcommittees and are collecting additional resources and people to accomplish individual action items (sometimes referred to as action teams). Please see Organizational Chart for details. 	
1.2	Agricultural Sector - Create a central county location for data collection and reporting regarding implemented BMPs, county conservation plans, restoration project permits, grant applications, 4R practices, etc.	Establish a centralized data collection and reporting system (enhancing existing systems where applicable)	FCCD, DEP, SRBC, PRBC, Farm Bureau, Penn State Extension, Department of Agriculture, NRCS	Countywide	2023-2024	Coordination between FCCD, NRCS, DEP, EPA, others – consistency and communication of data Reporting system will require maintenance, updates and adequate tracking and verification	None	None	Staff at state and local level to oversee and maintain system. Provide assistance to local reporting entities on an ongoing basis. Software - database	Sufficient funds needed	 11/25/2020 Update: CCWAP Coordinator, housed at the FCCD, facilitates data reporting efforts, making FCCD the current central data reporting entity for the county. FCCD reports BMPs to DEP through use of FieldDoc, PracticeKeeper, and other government permits/programs collected in the BMP Data Warehouse at the state level. FCCD also served as p of the Data Tool Review Team to develop/test FieldDoc. As the current central BMP data reporting entity, FCCD would like to convert tabular BMP planning/installation records into a spatial "status" 	

						Privacy concerns about data if subject to Right to Know			tracker" and is looking into existing county resources to establish such a database.
1.3	Agricultural Sector - Implement a survey process for capturing current agricultural best management practices that are unreported	Expand survey to cover countywide total acres in production by 2023	Penn State Extension, Farm Bureau, consultants,	Countywide implementation	scale survey to be completed by	Coordination between agencies, requires EPA to authorize/approve survey methodology and verification; Privacy concerns about data if subject to Right to Know law Survey needs to be standardized across the region and implemented in an organized fashion. We have heard from stakeholders that they feel they have answered surveys in the past but not certain what was done with the data.	Limited	Sufficient funds needed	11/25/2020 Update: Penn State Survey was relatively successful. Some farmers were open to completing them, but we did not see as many returned as we would have liked. It has been suggested to us by some farmers that they would consider completing if there was more incentive, or if it was less time-consuming. As for the Franklin Co. specific portion of this item, the pilot was intended as part of the creation of the Penn State survey. Due to time constraints, Penn State based the survey off of their Lebanon County feedback and no pilot was conducted in Franklin County. Now that the Penn State survey has been released, collected, and reported, this survey item needs no further action and can be considered "complete". Penn State will continue their survey without further action on the "Pilot survey of 20 Franklin County farms in 2019".

1.4	Municipal sector – There needs to be a coordinated approach to storm water management planning on the watershed or county level (Act 167). Create a systematic process and database for inventorying stormwater management practices and facilities in MS4 and non-MS4 municipalities	Evaluation of stormwater management rules and regulation at state, county and local level. Examine existing inventory and database systems in municipalities operating under MS4; Receive cost estimates for countywide inventory; Capture unreported BMPs on the ground for import into data system	TBD – Multimunicip al coordinating structure, look at possibility of utilizing COG structure or another forum	Countywide	Ongoing – Need to identify coordinating entity to compile information to be initiated in 2019	Stormwater planning best at a watershed or higher level. Coordination between local governments, disagreement on structure Needs to be an owner of the data, identifying that entity How will financial responsibility and authority of coordinating structure be defined	None	None	Hire WIP Stormwater Coordinator to develop process for coordinating participants and researching database opportunities and costs (Includes 1.4 and 1.5)	Funds needed fo staffing
1.5	Municipal sector - Evaluate feasibility of multimunicipal stormwater entity to implement stormwater management practices on a regional scale	Coordinate meeting to assess interest and establish guidelines; Research collaborative models from other counties; Develop guidelines for implementation and ordinances for adoption	TBD – municipalities and funding structure will need to be worked out	Open to countywide participation	Initial meeting to be held in 2019	Coordination between local governments, disagreement on structure Needs to be an owner of the data, identifying that entity How will financial responsibility and authority of coordinating structure be defined	See1.4		See 1.4	

ing	of Franklin County Planning Commission and County Commissioners. An invitation has been extended to attend the next Council of Government (COG) meeting to speak with municipality supervisors.
	11/25/2020 Update: Steering Committee is discussing this topic. Next steps: Hold municipal-specific stakeholder meeting to discuss implementing collaboration on a regional scale.

Priorit	y Initiative 2: Soi	l Health						
2.1	Establish a set of BMPs that will achieve required nutrient load reductions in an efficient and cost- effective manner (see BMP template)	Identify BMPs that may be reasonably achieved by 2025 (BMPs must be further refined before plan can be implemented); Implement BMPs as indicated Prioritized groupings of practices include Agricultural Sector 1. Cover Crop Establishment 2. Nutrient Management and Waste Storage 3. Tillage Management 4. Buffer establishment 5. Barnyard 6. Runoff Control 7. Waste Management Systems 8. Land Retirement 9. Stream & Wetland Restoration – non urban 10. Conservation Plans 11. Stream Bank Fencing Municipal Sector 12. Urban stream restoration 13. Stormwater performance standards 14. Bio-retention strategies 15. Permeable Pavement 16. Street Sweeping 17. Tree Planting	FCCD, FCPC, Municipalities, DEP, EPA, Stakeholders	Franklin County	2025	There are many unknowns that must be sorted before the BMP list can be finalized; considerable resource limitations on municipal and private enterprise levels to collect data and implement BMPs; complex regulatory and information silos do not currently allow for ready access to data; Programmatic changes identified in Priority 1 must come before nutrient load reductions can be demonstrated to be achieved. Cost of BMPs Incentives for BMPs Trading from development sector to Ag sector for cost/benefit. Consideration of regionalized block grants for BMP implementation; incentive programs for cover crops, stream bank fencing, etc.	Federal State Local Private	 Sufficient funds nee to implen BMPs, maintena inspectio Initial est \$15,000,0 for Ag BN with poss another \$10,000,0 for additi waste managen

cient ls needed nplement

ntenance, ections

al estimate 000,000 Ag BMPs possible ther 000,000 addition

agement

11/25/2020 Update: BMP Plan has been finalized and submitted to DEP. Implementation of plan in underway (see FieldDoc for details). Assessment of projects & BMP needs with willing/able landowners are constant. These opportunities and needs will be factored into 2021 FCo CAP Milestone Update if applicable.

In order to accelerate BMP Implementation, extreme focus has been placed on finding sufficient funds for landowner projects that have been "on hold" (due to funding). FCCD was successful in securing significant funding in 2020 to complete as many of these projects as possible in 2021. FCCD continues to strive for "a steady stream of funds" moving forward.

Additionally, FCCD has taken a proactive approach to be sure they are able to match landowners with available funding. Securing funding with specific projects in mind (and vice versa) is the key to being sure no funding is "wasted" or "missed out on". Furthermore, a key step of this proactivity is ensuring landowners are "ready to go" with completed designs and approved permits which is much more attainable with the hiring of FCCD's engineer. Other proactive actions include meetings with municipalities to collaborate on mutually beneficial projects, holding private industry educational events for large scale landowner outreach, and utilizing our on-staff engineer who was hired in January 2020.

ate 0,000 for cipal r BMPs

2.2	Evaluate current system of incentives/penalties for agricultural practices and define enhanced incentive program for BMPs with greatest impact on nutrient loads to get landowner buy in	Review overall impact of CREP, REAP, EQIP, Act 319, Growing Greener and other programs, evaluate feedback on what hasn't worked and communicate with local farmers/landowners on what incentives are being considered	EPA, DEP, USDA, local partners	Chesapeake Bay region	2021	Landowner buy in is a challenge, existing incentive programs don't pay for maintenance, which is a great concern with buffer plantings Also cover crop practices involve costs for equipment, pest management, etc. Incentive programs should account for more than planting alone.		Staffing	Funds needed	 11/25/2020 Update: Potential countywide incentive options are being discussed with other FCo offices. If countywide incentives prove to be not feasible, municipal level assessment will follow. Funding options to assist with farmer costshare are continuously being researched/assessed (as funding is our largest roadblock). Favorable incentive ideas included monetary incentives, such as bill discounts/tax credits. A meeting was held with FCPC to discuss such options. FCPC offered to discuss with the taxoffice feasibility of county-wide incentives through their office. Follow up meetings will take place in 2021.
-----	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------	--------------------------	------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	----------	--------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

				Franklin County – prioritized locations	2021	Payment for land taken out of production			Trained staff	Funds need for staff and analysis	11/25/2020 Update: DEP has provided buffer opportunity area data. FCCD Watershed Specialist is working with landowners interested in stream related projects to also assess buffer suitability within their riparian zones.
	Identify key areas for installation of BMPs with greatest net	Complete GIS	FCCD, FCPS,								ICPRB is currently working on a study of observed water quality over time in the county which will be completed in December of 2020. This study will help further pinpoint priority areas as well as improved areas throughout the county leading to more efficient allocation of effort and funds. Team is working with Ag Industry professionals to
	effect	mapping/inventory of areas for priority riparian buffer installation	FCGIS, Shippensburg University Center for Land Use	Franklin County	2023	Landowner buy in is a challenge, existing incentive programs don't pay for	Limited	Limited	Trained staff Data	Sufficient Funds needed for task Sufficient	engage farmers in BMP education and installation through a grant. The purpose of this effort is to equip the professionals to provide large scale outreach to farmers about the CAP and BMPs that could improve both their operation and water
2.3		Establish stream monitoring to assist in determining priority area and to document impact of installation of BMPs.	Studies, Chesapeake Bay Foundation, The Nature Conservancy,		2013	maintenance, which is a great concern with buffer plantings. Gathering data for GIS			Monitoring equipment	funding or ongoing operation of monitoring equipment	quality. Team performed a map assessment to ID key subsheds/catchments within the county. They are starting with the "Tier 1" subsheds – defined as being high N loading areas that feed an
a)	Define priority areas for riparian buffers	Identify targeted funding for these installations	Antietam Watershed Association, Franklin		2021	Limited staff			Staff for outreach & coordination	Fundin -	impaired stream. Tier 1 subsheds receive additional focus in the form of outreach and application for additional funding. Examples of action taken/planned in these watersheds
		Conduct landowner outreach	County Watershed Association, others			availability. Staff needed for outreach & coordination				Funding Needed for staffing	 include, but are not limited to: 1. Subshed A was the subject of a Section 319 grant application for funds to develop a HUC 12 level WIP.
		Engage watershed organizations, other groups in planting buffers	Monitoring will identify priority area and document								 Subshed B is being considered for a NFWF Small Watershed Grant application that will include BMP Implementation, Education, Workshops, etc. for lasting impact in the subshed.
		Conduct maintenance/assessme nts of buffers	water quality improvements of BMP installation								Chesapeake Bay Foundation, Alliance for the Chesapeake Bay, and Local watershed groups are being considered as partners for any upcoming buffer projects.

2.4	Prepare GIS mapping of proposed installation of all BMPs for WIP3	Provide mapping of existing BMPs and proposed BMPs to aid in planning purposes Provides ongoing data, bench mark	FCCD, FCPS, FCGIS, Shippensburg University Center for Land Use Studies, Chesapeake Bay Foundation, The Nature Conservancy, Antietam Watershed Association, Franklin County Watershed Association, others	Countywide	2023	Coordination between agencies, privacy concerns about data if subject to right to know Need to define who will own mapping and database This would be a further development of project initiated under 1.4 and 1.5 and would engage staff assisting in inventory efforts More funds needed for consultants, staff to support mapping and analysis effort	Limited	Staffing	Sufficien funding needed carry ou
2.5	Implement a better documentation program for commercial and homeowner nutrient applications in developed lands	Provide support for current fertilizer legislation; Conduct education of commercial landscape industry and homeowners; Identify acreage for urban nutrient management plans	DEP, Landscape industry organizations Non-Profits	Statewide	2020	Commercial and home use of nutrients should be evaluated in the CAST model, more data is needed on what application levels currently are If Bill doesn't pass, will not be able to implement this action.		State Private Non-Profits	Funding

ent ng ed to out task	 11/25/2020 Update: Team is working on in-house BMP Inventory and discussing data verification methods (Steering Committee and GIS Professionals). This inventory will be a GIS dataset that houses all past, present, and future implantation of creditable BMPs. Will include: a. PK spatial/tabular data export b. Newly implemented BMPs Discussion for maintenance of dataset will also occur among data teams. Further details on the status of this item are listed in the update of Action #1.2.
ng Id	11/25/2020 Update: See details to the left. This item is dependent upon a bill which has not yet been passed. Therefore, we are not yet able to take any action on this item.

2.6	Evaluate feasibility for establishment of ordinances on a countywide or multimunicipal scale to promote best management practices around stormwater for land use and development plans	Research model ordinances and Conservation by Design; Convene municipal working group to discuss best practices; Provide incentives for establishment of ordinances at municipal level, utilize tools such as preservation easements, and include educational goals for residents which attain benefits for reducing fertilizer use or establishing rain gardens, other BMPs.	FCPC, Municipalities, Non-Profits, others	Countywide	2020	This would be a further development of project initiated under 1.4 Municipalities have varying levels of capacity and history with establishment of ordinances around water resources	Limited	Limited	Staffing	Sufficient funding needed to carry out activities
2.7	Revise model ordinances to reflect current pollution reduction targets and BMPs Develop incentive programs for voluntary adoption of BMPs in developed areas and consider an offset program for implementation of high-impact BMPs in agricultural areas	Consult with communities, particularly those under MS4 regulations, to develop model ordinances that address nutrient, sediment, and stormwater management. Identify BMPs most suited to conditions found within Franklin County municipalities Provide educational materials and meetings to broaden understanding of updated ordinances and the application of BMPs Adoption of ordinance revisions by county municipalities	DEP FCPC FCCD Local Municipalities	Countywide	2019 Initial fact-finding regarding ordinances and incentive program structure 2020-2021 Development and distribution of ordinances for comment and /or adoption 2020- Provide guidance and support for incentive programs	Resistance to new or increased regulation is the largest obstacle to this action			See 2.6 above	See 2.6 above

Staffing	Sufficient funding needed to carry out activities	 11/25/2020 Update: Potential countywide incentive options are being discussed with other FCo offices. If countywide incentives prove to be not feasible, municipal level assessment will follow. Funding options to assist with cost-share are continuously being researched/assessed (as funding is our largest roadblock). Coordinator has pursued conversations with other county partners on this topic. Further details on the status of "county-wide incentives" are listed in the update of Action #2.2.
See 2.6 above	See 2.6 above	11/25/2020 Update: We are working on the procurement of private funding to assist with cost-share for landowners. This incentive program would assist with outreach and implementation as well as incentivize landowners to install BMPs.

Prior	Priority Initiative 3: Implement Education and Coordination/Outreach										
3.1	Develop a communications strategy to communicate parallel goals of WIP3 and local goals such as public and environmental health, economic development and others	Hold a county-wide event (such as water week or watershed snapshot) where each partner brings something to the table Additional educational programming to be defined and implemented – could include installation of BMPs for homeowners/landown ers in urban and rural landscapes. Soil health and appropriate use of soil amendments in developed lands could be another.	FCCD, FCPC, Penn State Extension, Watershed Organizations, Renfrew Institute, Municipalities, School Districts, Non profits	Franklin County – multiple locations	2020	With a variety of organizational partners, could include volunteer stream monitoring, enviroscape and watershed educational resources, recreational opportunities. Perhaps this participation could build on activities already underway and help coordinate MS4 education and outreach objectives across municipalities.		Staffing for outreach, education and coordination	Funding needed to carry out tasks	 11/25/2020 Update: CCWAP Coordinator developed a communication plan at the start of the position. This plan is referred to for all communication, outreach, etc. Plan was developed to ensure all people relaying the message of the CAP are delivering a consistent message. Part of this plan was the rebranding of "Countywide Action Plan" to "Clean Water for Franklin County" as a campaign or initiative, more enticing to the general public and neighbors of FCo. Since development of the communication plan, interactions about the CAP and need for BMP Implementation have been much more pleasant, understanding, and open-minded with a positive result of follow through on BMP discussions and implementation. Also among Steering Committee discussion is the implementation of education and outreach events, using the communication plan and outreach funds to accomplish widespread distribution of the initiative and its goals. 	
3.2	Utilize existing resources to engage educational objectives	Publicize and share information regarding educational resources such as online courses and webinars, Penn State Stormwater Basics, program resources such as Renfrew Institute and Pheasants Forever and volunteer resources such as Penn State Master Watershed Stewards program; Utilize existing BMP installations such as bioretention area in Chambersburg, riparian buffer plantings, pollinator meadows as teaching tools for municipalities and landowners	EPA, DEP, Chesapeake Bay related program offices, FCCD, FCPC, Penn State Extension, Municipalities, Penn State Extension, educational institutions and others	Countywide	2020	Through coordinating a municipal outreach and education group, resources could be shared and efficiencies gained		See 3.1	See 3.1	 11/25/2020 Update: To utilize existing resources, our team has been distributing articles, social media posts, and more to other groups and organizations who can help expand our reach. Newsletters, Facebook, our Website, and our Annual Report are our largest outlets. Last month, our Facebook page reached 137 subscribers and a single post reached ~6,300 people with ~200 engagements. The last Newsletter article about the CAP was successful and resulted in calls to the coordinator's direct line, asking for help with water related issues. FCCD will be distributing another newsletter in December 2020. Our team is in the process of looking for partners such as schools or entities of public lands to install and showcase real life BMPs and educate viewers/passersby on the needs/function of different BMPs. An additional and crucial component to this education idea is to also create and distribute "How-To" educational materials in which professionals demonstrate how to properly construct or implement the BMPs. CAP Team is utilizing existing resources and templates for these items where applicable and leaning on private industry to assist in the distribution of such materials which are provided at outreach events. 	

3.3	Develop a focused effort to promote BMPs in agricultural community	Evaluate best way to communicate innovative practices and models such as precision ag – cost/benefit tools; Consider establishing additional communities of practice such as grazing group forums so that practitioners can learn from others	EPA, DEP, USDA, Chesapeake Bay related program offices, FCCD, Penn State Extension, 4R Alliance Capital RC&D, Farming Community, others	Countywide	2022	Through coordinating an agricultural outreach and education group, resources could be shared and efficiencies gained; could be done on wider scale with additional funding			See 3.1	See 3.1
-----	-----------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------	------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	--	---------	---------

Phase 3 Watershed Implementation Plan (WIP) Progress and Milestones Template

Each county-based local area will use this template to identify:

1. Inputs – These are both existing and needed resources, public and private, to implement the identified priority initiative. These include both technical and financial resources, such as personnel, supplies, equipment and funding.

2. Process – what is each partner able to do where and by when. These are the action items listed under each priority initiative.

3. Outputs and outcomes – both short and long-term. These are the priority initiatives identified by each county. The performance targets are the intermediate indicators that will measure progress.

4. Implementation challenges – any potential issues or roadblocks to implementation that could impede outputs andoutcomes.

Asterisk: Place an asterisk next to the action number(s) for action items that appear in both the County Planning and Progress Template and the Programmatic Recommendations Template.

For each Priority Initiative or Program Element: Use the fields, as defined below, to identify the inputs and the process that will be followed to achieve each priority initiative. This is the "who, what, where, when and how" of the plan:

Description = What. This may include programs that address prevention, education, or as specific as planned BMP installations that will address the Priority Initiative. A programmatic or policy effort will require some ability to quantify the anticipated benefits which will allow calculation of the associated nutrient reductions.

Performance Target = How. This is an extension of the Description above. The Performance Targets and serves as a benchmark to track progress in addressing the Priority Initiative. Performance Targets may be spread across multiple Responsible Parties, Geographies, and Timelines based on the specifics of the Initiative.

Responsible Party(ies) = Who. This is/are the key partner(s) who will implement the action items though outreach, assistance or funding, and who will be responsible for delivering the identified programs or practices.

Geographic Location = Where. This field identifies the geographic range of the planned implementation. This could extend to the entire county or down to a small watershed, based on the scale of the Priority Initiative, range of the Responsible Party, or planned funding/resources. NOTE: Resource limitations alone should not limit potential implementation as additional funding may become available in the future.

Expected Timeline = When. Provide the expected completion date for the planned activity. This should be a reasonable expectation, based on knowledge and experience, that will aid in tracking progress toward addressing the Priority Initiative.

Resources Available: Technical & Funding = This field will note technical and financial resources secured/available to implement the program (Description). This is the total of the resources identified in the County Resources Inventory Template below allocated to the priority initiative as a whole; or, if available, to each action

Resources Needed: Technical & Funding = This field will note technical and financial resources needed/outstanding to implement the program (Description). This is the total of the additional resources projected and identified as needed in the County Resources Inventory Template below allocated to the priority initiative as a whole; or, if possible, to each action.

Potential Implementation Challenges/Issues = This field will note challenges and issues that may delay program implementation (Description).

Progress to Date = This field will be used for annual reporting on priority initiatives. This is a description of the action(s) your county took toward achieving the priority initiative. Examples include education and outreach, programmatic changes, etc. For numeric priority initiatives your county can retrieve those numbers directly from FieldDoc or put in the column "See FieldDoc."

Justification for Change to Action Item = This field will be used for two-year milestone updates. This field allows for your county to adjust your original targets and goals based on progress to date. Your county may adjust goals and targets up or down based on your progress to date. This field requires a justification as to the reason of change, whether up or down.

11/25/2020 Update: CCWAP Coordinator has received grant funding for an education one-pager (reference sheet) to distribute at an all-day education event where Ag Industry members will learn about the CAP and how/why to educate the farmers they work with on a daily basis.

*The one-pager/reference sheet will be a heavy-duty card stock that can be hung in the farmers home/office/etc. and describes Ag BMPs and their benefits. It will also describe the BMPs' benefits to their personal lives aside from the great things each will do for their farms. The reference sheet will also include the contact information of the Conservation District and include a short survey gauging the farmer's knowledge of/need for BMPs. The idea is that they will receive this information from an individual they trust/advises their business, learn about the benefits of BMPs, and call us for assistance and guidance of how to proceed with installing BMPs that work for them and significantly reduce nutrient loading.