

MEMORANDUM

TO: Matt Rowe, Maryland Department of the Environment
FROM: Dan Nees, University of Maryland
CC: Joanne Throwe, Throwe Environmental
Jim Edward, Chesapeake Bay Program Office
Lucinda Power, Chesapeake Bay Program Office
RE: **CWIP Financing Project Update**
DATE: April 3, 2020

The following is an update on activities related to the Conowingo Watershed Implementation Plan (CWIP) Financing project. The purpose of this update is to provide the CWIP steering committee with an understanding of where we are in our process as they move towards approval of the WIP itself. Specifically, we are providing an update related to four concurrent activities: developing and engaging a project leadership team and process; evaluating existing Chesapeake Bay restoration financing processes; establishing a framework for a proposed Conowingo restoration financing system; and, establishing the framework for a pilot project. The following sections of the report provide a summary of our activities in regard to these four activities.

Activity One: Develop a Project Team and Engage Leadership. This project is being implemented by the Chesapeake Bay Trust in partnership with the University of Maryland and Throwe Environmental, Inc. The project core leadership team includes:

- Jana Davis, Chesapeake Bay Trust
- Dan Nees, University of Maryland School of Public Policy
- Joanne Throwe, Throwe Environmental, LLC
- Bonnie Norman, E3 International, LLC
- Paul Marchetti, Private Consultant, Pennsylvania
- Hogan Lovells, LLC (multiple members)

In addition to the core leadership team, the project is being guided by an Advisory Committee, which is made up of leaders and substantive experts from around the region. Member organizations and institutions include:

- Washington D.C. Government - Department of Energy and Environment
- Anne Arundel County Government, Maryland
- Eckert Seamans, Pennsylvania
- National Fish and Wildlife Foundation
- Prince George's County Government, Maryland
- Eco Investment Partners
- Maryland Department of Natural Resources

- USDA Office of Env. Mkts
- Virginia Tech

The advisory committee has convened, either in person or by phone, six times since the start of the project last summer.

Activity Two: Creating an Effective Financing System. The project team’s first step was to develop the framework for a Conowingo Financing System. A financial system is a set of institutions, such as banks, insurance companies, and stock exchanges that permit the exchange of funds. Financial systems exist on firm, regional, and global levels. Borrowers, lenders, and investors exchange current funds to finance projects, either for consumption or productive investments, and to pursue a return on their financial assets. The financial system also includes sets of rules and practices that borrowers and lenders use to decide which projects get financed, who finances projects, and terms of financial deals.¹ For the purposes of Conowingo, the financing system must ensure the long-term implementation and management of the CWIP itself, and our work focuses on bringing those multiple components together successfully. Our work in that regard has focused on the following tasks:

- Analysis of regulatory systems that facilitate financing and efficiency at scale;
- Review and analysis of national interstate financing systems; and,
- Review and analysis of innovative state and local environmental restoration and protection financing systems and tools.

In addition, the Conowingo Request for Proposal (RFP) specifically addressed the potential need for new institutional capacity to implement the CWIP. Therefore, the leadership team focused much of its time addressing institutional capacities necessary for implementing a new financing system. This includes:

- Conducting an assessment of necessary institutional capacities and review of existing institutions that could act as a financing institution for Conowingo;
- Addressing the necessary legal frameworks associated with a new financing system and associated institution;
- An evaluation process for existing institutions who could potentially serve as a financing system;
- Draft review and outline of necessary bylaws and Standard Operating Procedures (SOP) necessary for interstate financing system.

As part of our research on the above issues, the project leadership team conducted direct interviews with the following institutions for the purpose of gaining a better understanding of governance, policy, innovation, investments, leveraging, durability, and implementation:

- New Jersey Infrastructure Bank;
- Illinois Finance Authority;
- Rhode Island Infrastructure Bank;

¹ <https://www.investopedia.com/terms/f/financial-system.asp>

² Please note that we are dealing with both absolute cost reduction (cost goes down everywhere for everyone) and

- Indiana Finance Authority;
- Iowa Finance Authority;
- Wisconsin Finance Authority;
- Pennsylvania Infrastructure Investment Authority (PENNVEST);
- Morgan Stanley Investment Banking Company;
- Susquehanna River Basin Commission;
- Delaware River Basin Commission;
- Standards and Poor Global Ratings;
- The Blue Water Fund;
- The Delaware River Fund;
- The Nature Conservancy.

Key issues and outcomes to date. Again, the purpose of a financing system is to support the implementation of a project, goal, or desired outcome. Therefore, the purpose of the Conowingo financing system is to support the reduction in nutrient and sediment pollution to the watershed, specifically through the implementation of the Conowingo Watershed Implementation Plan (CWIP). Therefore, the minimum measurement of financing effectiveness is implementation success. However, an expanded definition of effectiveness includes three factors or enabling conditions:

- **Efficiency:** Efficiency is the capacity to achieve a goal or desired outcome with the least waste or expenditure in fiscal resources, time, effort, or competency in performance. In other words, inputs are minimized while outcomes are maximized. Therefore, restoration financing efficiency assumes that spending less money to achieve restoration goals is preferable to spending more.
- **Scale:** Financial scale refers to the level of fiscal resources necessary for achieving desired return on investment. In short, scale is the level of revenues that are necessary for achieving the CWIP.
- **Duration:** In its simplest form, *funding* duration or durability means ensuring that revenue flows are commensurate with the expected long-term implementation costs associated with a desired outcome.

Each of these three conditions must serve as the framework for a sustainable CWIP financing system.

Efficiency: Of the three enabling conditions, efficiency has perhaps the most significant impact of the entire financing and funding process. Maximizing efficiency ensures not only that new water quality investments have the greatest impact, but it also has the potential to profoundly impact existing investments. The result is more pollution reductions per dollar invested, which is the equivalent of more money being inputted into the system. In other words, greater pollution reductions can be achieved without any additional financial investment.

Restoration efficiency is measured in terms of financial inputs (dollars) per some level of output or outcome (in this case pollution reductions). Therefore, efficiency is represented by the simple equation: $\$/lb$. This equation suggests that there are two ways to influence or change efficiency. The first is to adjust the numerator thereby making each pound of pollution reduction marginally more or less expensive. In other words, we can adjust relative cost. Conversely, the second way to change efficiency is to influence the number of pounds of pollution reductions achieved per dollar spent. In other words, we can adjust relative effectiveness. The restoration financing system, therefore, must impact both relative costs and relative effectiveness. To that end, the restoration financing system must be designed to address the follow in financing elements:

Impacting Relative Cost: these refer to interventions for reducing pollution reduction costs.² These interventions will be the focus of our financing strategy:

- *Reduce administrative costs*:
 - Improve program performance
 - Innovate procurement procedures
 - More efficient institutions
 - Maximize scale
- *Reduce cost of capital (borrowing cost)*:
 - For example: SRF subsidized loans
- *Reduce implementation costs (geography, scale, etc.)*:
 - Focus on geographies that are less expensive
 - Focus on practices that are less expensive (in both the short and long-term)
 - Reduce operations and maintenance costs

Impacting Relative Effectiveness: improving relative effectiveness of each dollar invested is a bit more complicated because the entire financing process is being implemented within the structures of the watershed models. Therefore, there are fewer opportunities available for influencing the pollution reductions themselves through the financing process.

- *Target investment to the most effective long-term practices*: in short, not all practices are the same in regard to long-term efficiency. Therefore, an effective intervention would be to target investments to the most efficient practices.
- *Target funding based on delivered loads*: this basically refers to geographic variances in effectiveness. A practice in one part of the watershed may perform very differently than an identical practice in another part of the watershed. This is a form of implementation targeting.

Financing and Funding Scale. Again, financing scale refers to the level of fiscal resources necessary for achieving desired return on investment. In short, scale is the level of revenues

² Please note that we are dealing with both absolute cost reduction (cost goes down everywhere for everyone) and relative cost reduction (cost goes down unevenly or is shifted from one party to another).

that are necessary for achieving the CWIP. Potential interventions available for impacting scale revenue include:

- *Increasing the available revenue sources:* there are basically four revenue source “categories” that are available for consideration:
 - Regulated public: these are revenues that are directly associated with a regulated mandate. This would include: stormwater management; wastewater management; and, combined animal feeding operations. Regulated public funding is supported through traditional public revenue systems, i.e. fees and taxes.³ Therefore, the primary intervention is to increase relevant taxes and fees.
 - Voluntary public: these are public financing and funding programs that are not directly associated with a regulated mandate. These would include: SRF investments; USDA cost share programs; and, State funding initiatives such as the Chesapeake and Atlantic Coastal Bays Trust Fund. As with regulated public revenue sources, voluntary public revenue is supported or generated through taxes and fees. Therefore, the primary intervention would be to increase taxes and fees.
 - Consumer-based private: these are revenue flows that indirectly support restoration activities through consumer markets. They are often associated with consumer marketing related to sustainable activities including: oyster restoration and aquaculture; organic farming; and, sustainable forestry. The primary intervention is to increase the market for these types of consumer-based goods.
 - Philanthropic-based private: these are private investments supporting activities that are designed to reduce market failure. They are often purposely disaggregated from regulated public revenues. The primary interventions are to better target philanthropic investments and/or increase those investments.

These are the four primary revenue categories. There is certainly crossover between them on occasion but for the most part they effectively guide revenue generation decision-making.

Financing Duration. Finally, the financing system must address the interventions available for ensuring investment duration. These include:

- *Expanding finance:* in short, financing is the process by which up front capital is allocated and invested in support of restoration activities. Funding is the capital that is used in support of those financing activities. Effectively connecting the two is what ensures implementation success over the long-term. Potential interventions to ensure financing and funding duration includes:

³ It should be noted that the most efficient public response to mandated activities is to regulate consumer or industry activities. For example, the primary source of funding supporting CAFO permitting requirements comes from the industry itself through the implementation of practices and activities necessary to achieve and remain in compliance.

- Leveraging: high upfront costs associated with many structural practices and can create an implementation disincentive, thereby shifting capital to short-term practices that may be less efficient in the long-term. Debt or leveraging spreads out upfront implementation costs over time, thereby making project implementation and financing more palatable to the public sector.
- Transfer risk to the private sector: in a traditional leveraging financing scenario, the funding and implementation risk rests entirely with the private sector. By transferring that risk to the private sector, or at least some the risk, private capital finances upfront while the public sector funds the implementation over time. This can be a very effective way of reducing upfront capital costs.

Activity Three: Evaluating the Capacity of the Existing Financing System. As the project team worked to understand the elements of a sustainable financing system, we also began the process of assessing the capacity of the existing restoration financing to achieve Conowingo WIP goals and desired outcomes. Generally speaking, the effectiveness of the restoration financing system can be described by asking one question: how much money will be needed to achieve restoration success given the current system, and how much less would that required funding be with a more innovative and efficient financing system? Therefore, our work focused on key funding and financing processes, including: diversification and scale of revenue flows; institutional capacity, including the ability to address inter-jurisdictional financing; the capacity to engage the private sector and investment; and, the ability to develop and implement market-based financing processes such as ecosystem service payments and water quality trading.

This part of our project is being implemented in two phases. In phase 1 we implemented and conducted a “general evaluation” of existing capacity, specifically at the state and federal levels, to finance and fund the additional pollution reductions necessary for achieving the Conowingo WIP. This consisted of detailed analysis and conversations with program experts across the region. Phase 2 of our work will focus on the capacity of existing systems, specifically at the state level, to finance the final CWIP. The project team will work directly with state leaders to discuss how current programs can and will be used (or conversely won’t be used) to ensure implementation of the WIP.

Activity Four: Pilot Project Assessment and Design. Finally, the project team has been assessing the potential efficacy of establishing a pilot project, which would enable a new financing system, and presumably a new financing institution, to be implemented and based on real world data. A Conowingo Financing pilot project would allow the Bay leaders to address uncertainty in the financing process, and thereby better understand how effectively a new system will function. The pilot project will in effect be a study where the feasibility of a broad-scale financing system redesign can be understood prior to bringing this new system to scale. To that end, the leadership team’s work over the next few months will be to create a pilot framework that will:

- Work effectively within the framework of existing programs an financing processes and flow of operations;

- Is based on a limited set of requirements and desired outcomes, specifically efficiency in regard to reduced nutrient and sediment pollution; and,
- Identifies and leverages new revenue sources.

Once completed, the Pilot will enable Bay leaders to better understand the following:

- The fitness or effectiveness of a new financing system in meeting CWIP outcomes and goals;
- The potential scalability of the project, or the ability to continue to function well when it is expanded in scope; and,
- The potential of the Pilot, when scaled, to maintain efficiency, scale, and durability in the long-term.

In short, the results of the Pilot will confirm that the new financing system either can or cannot be met and will give Bay leaders the information and data they need to readjust and make course corrections as needed.

Conclusion:

The work completed by the Finance Team to date closely followed our proposed workplan and timeline. We anticipate providing you with regular future updates on our activities and findings to ensure close coordination with EPA on our final product but remain available to any additional information you need on our progress.