



Final Report: Financing a Resilient Annapolis, Maryland

Part 1: Executive Summary and Key Findings

In 2014, the Environmental Finance Center at the University of Maryland (EFC) launched the *Watershed Investment Incubator Project* with the support of the Chesapeake Bay Program Office. The overarching goal of this project was to create “incubators” or direct learning opportunities in which local and state leaders could develop and implement innovative public-private partnerships and market-based financing systems that could then be modeled and replicated across the region and the country. To pilot this work, the EFC linked two iconic communities—Annapolis, Maryland and Newport, Rhode Island—to create a unique learning and policy development opportunity. The EFC’s objective was to identify opportunities for these two communities to implement innovative partnerships with the private sector in order to address key water management issues.

Coastal urban communities like Annapolis and Newport face dual financing challenges: protecting and restoring aquatic ecosystems and water quality through aggressive stormwater management; and, mitigating the impact and risk associated with sea level rise and major storm events. By addressing these two financing challenges collectively, holistically, and with a long-term vision in mind, coastal communities will be better positioned to thrive. Lessons learned from the collaboration between Annapolis and Newport are informing the EFC’s ongoing efforts to provide innovative technical assistance and financing capacity related to water resources management and community resiliency.

In 2015, the EFC received continued support to expand work in Annapolis, focusing specifically on building the capacity of the City to implement water quality and infrastructure financing programs within their community. The goal has been to identify innovative new approaches for allocating and investing capital in support of watershed restoration and protection programs - especially those that simultaneously make the City more resilient to the effects of climate change. Some of these approaches include creating financing efficiencies, achieving sufficient scale, reducing risk, and incentivizing innovation.

Key Findings and Recommendations. While there are improvements needed in regard to the City’s stormwater management financing system, it provides an effective foundation for establishing a resilience financing system moving forward. The EFC’s findings and recommendations are centered on two key financing elements and processes: moving from financing costs to investing in the City’s economic development; and, creating the conditions that are necessary for enabling and incentivizing investment in community resilience.

Transforming Cost to Investment. Coastal communities like Annapolis are faced with the dual challenge of effectively managing stormwater runoff, and other natural resource protection issues, while at the same time preparing for the impacts of climate change. The scale of these financing challenges will require the City to advance multiple community efforts at the same time: incentivizing investment in critical infrastructure projects while simultaneously transforming the City's stormwater and climate change adaptation efforts to a comprehensive resilience-based economic development process designed to support economic growth and development into the future.

Establishing the Enabling Conditions. Making this transformation to a resilience economy will require City leaders to establish the processes and systems that will effectively incentivize investment and economic development across an array of industry sectors. In effect, City leaders must establish the enabling conditions for attracting investment—both public and private—at scale. The EFC identified four categories or conditions that are essential for establishing sufficient and effective financing and economic development systems:

Leadership: The most fundamental condition for attracting investment and advancing complex infrastructure financing and economic development efforts is leadership. The City of Annapolis has the good fortune of having a multitude of effective leaders throughout the community, many of them focusing specifically on issues associated with stormwater management and climate change. It is essential, however, that the City create structure and continuity with its resilience financing and economic development efforts by appointing a Resilience Director to oversee and guide all of the City's programs and investments in this area.

Planning: All resource protection and economic development efforts require effective planning at both the local and regional scales. The City of Annapolis has initiated and benefited from a variety of planning efforts and processes; some are codified within the City's decision-making system, such as the comprehensive planning process, while others are initiated in partnership with other organizations and institutions to address specific infrastructure needs. Though the City has begun to focus energy on climate change issues specifically, there needs to be a coordinated effort to link all of the disparate plans into a comprehensive and long-term resilience financing and economic development plan.

Institutional Capacity: A resilient community will require the engagement of myriad private sector stakeholders. However, it is also true that all of these stakeholders must work in concert and coordination with public agencies and leaders. In fact, much of the leadership and capacity necessary for advancing resilience initiatives, including water quality restoration and stormwater management, must come from the public sector. This in turn will require institutional capacity across multiple agencies including planning, public works, budget and financing, and economic development. The EFC's analysis indicates that there are two primary capacity needs within the City. First, the City's stormwater program must be improved, including adjusting stormwater fees to match anticipated costs in the future. Second, City leaders must ensure that fee revenues remain dedicated to stormwater management issues across the City.

Interaction and engagement with the private sector: City leaders must approach the resilience effort as a true partnership with the citizens and businesses of the community, thereby utilizing and leveraging the resources and unique capacities associated with each sector. City leaders have done an effective job of engaging the community on a variety of issues associated with stormwater management, sea level rise, economic development, and other development and planning issues. It is now essential that this expand to making resilience a primary issue connecting the public and private sectors. The magnitude of the financing effort facing the City will require complete cooperation and engagement moving forward.

Part 2: Project Structure

Understanding that the impetus for this project was the connections between stormwater financing and climate change resilience, the EFC set out to identify the key components of a comprehensive resilience financing system. In addition, the following two questions were addressed:

- Is the City's resiliency financing system pointed in the right direction?
- How can the City's stormwater financing system create an efficient and effective foundation for a resilience financing system?

With these two questions as the focus, the project was based on the following structure.

Project Objectives. The primary objective with this project was to help make the symbiotic connections between stormwater management financing and broader community resilience financing. In addition, the objectives were to:

- Identify processes for expanding stormwater financing by establishing the enabling conditions necessary for incentivizing public and private investment at scale.
- Develop a comprehensive community engagement process designed to improve the capacity of local and regional leaders to finance stormwater and climate resilience efforts.

Project Outputs and Tasks. The following specific project outputs and tasks were implemented over the past year:

- Convened an Advisory Committee of City leaders and program/issue experts.
- Conducted an assessment of the City of Annapolis' stormwater financing system and processes, including identifying the potential linkages to resilience financing. Included was an evaluation of the conditions necessary for enabling public and private resilience and water quality investment at scale.
- Conducted an assessment of the City's broader financing and budget systems to identify opportunities to leverage multiple community priorities and investment strategies.
- Conducted a literature review and analysis of urban resilience implementation and financing and the integration of water quality restoration, stormwater management, and tidal flooding.
- Developed a concept and implementation plan for a comprehensive and rigorous community engagement financing program designed to increase the capacity and scale of local and regional financing in support of community-level resilience investment.

Desired Outcome. Ultimately the desired outcome is more environmentally and economically resilient communities across the Chesapeake Bay watershed. Though the current Bay restoration financing system is resulting in demonstrable changes to local water quality financing and implementation, long-term success will require a more comprehensive financing system that uses investment in resilience as a mechanism for economic development.

Part 3: Background

Urbanized coastal communities like the City of Annapolis face immense resource management challenges. In particular, protecting and restoring aquatic ecosystems and water quality through aggressive stormwater management, and mitigating the impacts of climate are priorities that loom large on a physical and political landscape that is constantly evolving. The impetus for this project was to provide communities with the capacity to address these multiple financing challenges in a way that not only protects the City from risk but also leads to a more vibrant and economically robust community. Working with City leaders over the past two years, it became apparent that while it is essential for the City to coordinate its infrastructure financing efforts, this will not be enough to achieve economic, environmental, and social resiliency. In other words, the connection between various infrastructure needs is necessary but not sufficient; resilience will require a much more comprehensive, market-based financing approach.

Fortunately for Annapolis, a good deal of thought and effort has been invested in these issues already. The City has developed planning documents tied to City Dock, the Department of Housing and Community Development's Sustainable Communities program, the Sustainable Maryland certification process, and natural hazards and flood mitigation. The City's Comprehensive Plan has been recently updated, and cultural resource planning is in progress as well. There is an important opportunity to strategically implement these plans in a way that creates efficiencies and reduces costs, fills resource and capacity gaps, and sufficiently and sustainably supports resilience implementation well into the future. More specifically, there is an opportunity for communities like Annapolis to think beyond discrete investment processes that focus on specific and often individual infrastructure needs, to establishing a more comprehensive symbiotic link between infrastructure financing and community resilience and economic vibrancy.

The level of resilience in communities like Annapolis is dependent on the quality and performance of the overall urban system, not solely on the climate change adaptation of singular infrastructure elements.¹ This relationship between specific infrastructure needs and overall community functioning is not unique to climate change resilience. For example, through EFC's community capacity building work, it has been noted that the communities that have the most successful and comprehensive stormwater management programs have either robust, high performing urban systems or are using stormwater management as a mechanism for enhancing the performance of those systems. As a result, the opportunity exists to use stormwater financing as the foundation of resilience financing efforts. In fact, stormwater management financing systems can serve as an indicator of successful resilience efforts. Conversely, there is an opportunity for comprehensive resilience financing to improve the efficiency and effectiveness of stormwater and water quality financing.

¹ ICLEI, 2011, Financing the Resilient City: A demand driven approach to development, disaster risk reduction and climate adaptation - An ICLEI White Paper, ICLEI Global Report.

Part 4: The Resilience Financing System

Stormwater management and climate change adaptation are similar in many ways. Both focus on addressing a specific threat to the community, either in regard to the health of the natural environment or from the impact that a changing environment may have on the community itself. Though both issues are becoming increasing concerns at the local level, especially in coastal communities like Annapolis, long-term success will require shifting from risk-based, siloed financing processes to a comprehensive resilience-based investment process.

The distinctiveness of resilience as the focal point of local financing and economic investment is more than semantic. Resilience focuses investment on increasing a city's overall ability to support a vibrant, healthy society and economy under a wide range of circumstances. By contrast, adaptation focuses resources on mitigating specific risk factors. Though mitigating specific risk factors associated with climate change is essential—especially in coastal communities like Annapolis—planning and financing efforts are often executed without a clear connection to the overall economic, environmental, and social performance of a community as a functioning urban unit or system.² In effect, this describes the distinction between resilience and adaptation.

Resilience focuses on the reliability, sustainability, and efficiency of performance. More specifically, from an urban property and infrastructure development perspective, resilience is the reliability of an investment in a City to generate returns and revenue streams under a wider range of circumstances. Resilience, therefore, creates a clearer linkage with the area or infrastructure system's overall investment attractiveness and potential. Rather than just being a risk-reduction cost, resilience investments aim to create an urban area's development premium.³

Financing Effectiveness: The Importance of Local. A key component of resilience financing is the focus on the local level. Projects with local origins responding to unique local circumstances and interests, and that are supported by the established local planning, regulatory, and budgeting processes, have a much greater chance of success than projects that have been designed to respond to the needs of external institutions and supra-local agendas.⁴ This is a critical issue in regard to stormwater management. Implementation of stormwater programs is often founded on achieving regulatory requirements rather than what would specifically benefit the community. Perhaps a better approach is to begin with what would have the greatest impact on the community in a way that would also improve water quality.

Financing Efficiency: Complete Integration. A key measure of the efficiency of bottom-up resilience upgrading would be the ability to reduce the need for special purpose external adaptation financing. When climate risk and other risk reduction is a basic design factor in conventional urban development, so-called no-regrets opportunities for risk reduction can be

² ICLEI

³ ICLEI

⁴ ICLEI

found and implemented at little or no additional cost.

From Cost to Investment: The Enabling Conditions. For communities like Annapolis to effectively move to resilience, they must establish the conditions that attract and target investment at scale. Whether this means ensuring that local tax and fee revenue is invested in the most efficient and effective manner possible, to ensuring that the citizens, businesses, and private institutions within the community are directly and substantively engaged in the planning and financing processes, the enabling conditions ensure that money is allocated and invested in a manner that facilitates a resilient and vibrant community and economy. These local enabling conditions include:

- **Leadership:** It should come as no surprise that perhaps the most critical enabling condition necessary for attracting and effectively targeting investments in resilience is leadership. Cities are complex, and therefore city management involves a broad array of public and private sector stakeholders, often with little interaction or communication. This complexity is intensified when addressing issues such as resilience, climate change, and natural resource restoration and protection.⁵ As a result, effective leadership is one of the most important enabling conditions to incentivizing investment in local resilience efforts.
- **Planning:** Comprehensive, coordinated, and flexible planning is elemental to the financing process. The planning process is especially important to advancing community resilience due to the very complex and crosscutting nature of the issue. Community resilience addresses and impacts a broad array of infrastructure development, environmental, social, and economic issues within cities like Annapolis. As a result, the capacity to plan sufficiently and effectively is an essential condition for effective financing and community investment.
- **Institutional Capacity:** The public leadership and capacity that is essential for advancing resilience initiatives, including stormwater management financing, is demonstrated with the various agencies that are directly or even indirectly engaged in managing, directing, and financing projects and programs. The varied and multidiscipline nature of resilience will require flexible and strategic interaction among many agencies and programs. In addition, it will be essential for public agencies to shift from a singular focus on specific infrastructures towards a more integrated focus on overall risks, development conditions, and local area performance.⁶
- **Effective financing systems:** Expanding a resilience financing process within the City of Annapolis will require ensuring that the City's current financing systems are at capacity and functioning efficiently. This includes: allocating sufficient revenue streams either in the form of fees and taxes; creating integrated financing processes that enable cross-collaboration among agencies and programs; and, advancing and supporting the procurement of investment through managed, competitive sourcing mechanisms and processes.

⁵ Rockefeller

⁶ ICLEI

- Interaction and engagement with the private sector: Finally, an effective, market-based approach to financing community resilience requires effective engagement and interaction with the private sector. This includes creating effective outreach and communications to residential and commercial rate and taxpayers. In addition, it requires establishing policies and programs that make it profitable for business and the market to embrace resilience processes and practices. In addition, it requires establishing local policies, permitting, procurement, and regulatory conditions that provide a focus on performance, flexibility, and consistency in the marketplace.

These five enabling conditions represent the foundation of an efficient and economically vibrant resilience financing system. Section 5 discusses how these conditions serve as the framework for the community assessment and recommendations for moving forward.

Part 5: Community Capacity Assessment & Recommendations

Using the enabling conditions described in the previous section, an assessment of the City of Annapolis and its capacity to advance resilience in its community was conducted. The intent was not to focus on the City's weaknesses in advancing resilience programs, but rather to identify strengths that City leaders can build a foundation upon moving forward. The following offers recommendations regarding each enabling condition, as well as general suggestions for next steps.

Leadership Assessment. Leadership is one of the real strengths of the City's stormwater management and resilience efforts. There are talented and committed leaders across the City representing multiple stakeholder interests, including: political; agency or institutional; and, citizen/business leaders.

Political leadership: Political leadership within the City has been relatively strong and engaged over the length of this project. The Mayor and the City council have shown genuine interest and concern in regard to issues associated with climate change, resilience, and stormwater management. In addition, City political leaders have provided agency staff with the autonomy and capacity to advance climate change, water quality restoration, and community resilience. As is the case in most communities, political leadership in Annapolis will serve as a necessary foundation for resilience efforts in the future.

Agency and institutional leadership: Annapolis has several leaders within City government that have helped advance climate change and stormwater management programs. Specifically, two agencies have led programs in these areas. First, the Historic Preservation Program within the Department of Planning has become a regional and national model for establishing and implementing plans associated with protecting historic assets from the impacts of climate change and flooding. In addition, the program has led community outreach efforts on broader resilience issues. Second, the Department of Neighborhood and Environmental Programs, which administers the City's stormwater program in partnership with the Department of Public Works, has taken the lead on addressing the impacts and synergies between stormwater management and sea level rise and tidal flooding. As a result, there is now a push to integrate the two issues within City government.

Citizen and business and leadership: Annapolis has a number of organizations that have been highly active in advancing community outreach and education in regard to stormwater management and climate change resilience, including land conservancies, watershed organizations, and homeowners groups. These groups have had a direct impact on the City's environmental stewardship and financing. For example, there are currently approximately \$5 million worth of stormwater/green infrastructure projects in various stages of design and implementation across the City. None of the projects is being financed by the City, though the City has committed to maintaining the practices in the future.

There are also new citizen activism efforts being led by the Climate Stewards of Greater Annapolis. Finally, the City's Green Team, which was established as part of the process of becoming a certified community in the Sustainable Maryland program, has served as a direct conduit between the community and the City government.

Recommendation One: The primary recommendation is for the City to hire a resilience director. The director should be responsible for coordinating communication, financing, planning, and outreach associated with resilience—including water resilience—efforts both within and outside of City government. We believe this position is necessary for two primary reasons:

- City management, especially in regard to achieving community resilience and environmental restoration and protection, involves a broad array of public and private sector stakeholders involved, often with little interaction or communication; and,
- Cities are often reinventing the wheel rather than looking to solutions other communities have implemented and modifying them to fit the local context.

A Resiliency Director can address this by:

- Working across government departments, improving internal communications, promoting collaboration, avoiding duplication of efforts, and connecting the efforts of multiple departments, projects, and plans;
- Engaging stakeholders to better understand challenges and build support for initiatives;
- Leading the development of the consensus building process that results in a resilience strategy, as well as the implementation of the collection of initiatives and activities contained within that strategy;
- Serving the point person who can consider all planned projects and initiatives from a resiliency perspective looking for ways to improve efficiencies and achieve co- benefits; and,
- Collaborating with resiliency officials from other cities to exchange lessons learned and scale up successful solutions.

Institutional Capacity Assessment. The City’s leadership capacity is reflective of its institutional capacity. The assessment of the City’s key agencies associated with stormwater management and climate change resilience indicates that for the most part programs are managed and administered effectively. The City’s institutional structures are sufficient to manage a more comprehensive resilience financing system with a few modifications based primarily around communications and consolidation. The EFC suggests the following adjustments to the City’s institutional functions and capacities:

- Establish a codified process for ensuring technical and institutional capacity exists within relevant agencies for designing comprehensive resilience projects across a broad array of issues and potential impacts. Achieving community resilience will require the integration of resilience planning into each function and program of City government. This in turn will require a highly coordinated leadership effort on the part of the resilience director. In short, climate resilience, including water management, must be embraced as a fundamental municipal challenge, with a comprehensive approach from all parts of the City government.

⁷ Rockefeller Foundation

This process should focus on the complexities of resilience within municipal government and should address:

- Ensuring agency capacity to manage and stage complex project execution and for preparing the different investment propositions related to different components of these projects.⁸
- Building capacity of planning processes for identifying vulnerabilities and risks, and linking the related risk mitigation solutions with priority performance enhancements in relevant areas or systems.

It should be noted that this is not an recommendation to create an office of resilience; if the City establishes a resilience director position and takes a comprehensive approach to implementation, the entire City structure will become the office of resilience.⁹

- Consolidate stormwater management and water resilience functions. It is essential that the City create efficiencies and synergies between its stormwater management and water resilience management programs. The management of water, either from storm events or from tidal flooding and sea level rise, should be addressed in a coordinated manner. This includes transforming the City's stormwater fee into a water resilience fee, focusing on a broad array of water resource management needs.

Resilience Planning Assessment. The City of Annapolis has implemented a variety of planning efforts addressing a broad range of infrastructure and community issues. There are some plans that were initiated and led by the City itself, such as the Comprehensive Plan, the Capital Improvement Plan, and the recently completed Watershed/Stormwater/Green Infrastructure plan. Other plans were the result of partnerships or engagement of outside organizations and institutions, such as the ERM¹⁰/WCBM planning report addressing sea level rise in the City, and the WCBM¹¹ report on flooding inundation in Eastport.¹²

While these plans are comprehensive, they have not yet been translated into action, especially as it relates to sea level rise and the impacts of climate change. For example, the sea level rise studies provide mitigation options, yet those options have yet to be adopted or embraced by the City leadership. As a result, there is no commensurate financing strategy or plan associated with the many studies and plans. It should be noted that the City is moving forward on expanding their stormwater program. The watershed plan provides the City with a roadmap for meeting its stormwater restoration goals and requirements;¹³ the next step is to translate that plan into a financing strategy.

⁸ ICLEI

⁹ Please note that in June 2016 the Annapolis City Council approved an agency reorganization, which brought together the Department of Planning and the Department of Neighborhoods and the Environment. As a result, stormwater management and water resilience are now managed within one department.

¹⁰ Environmental Resources Management.

¹¹ Whitney Bailey Cox & Magnani.

¹² A complete summary listing of the City's most recent planning efforts will be included in the Appendix.

Much if not all of the City's climate change adaptation and resilience planning to date has focused on sea level rise and tidal flooding, as well as catastrophic storms. This is to be expected from a coastal community that derives much of its social, cultural, and economic identity from its waterfront communities and areas. However, the impacts of climate change will be widespread and varied and will touch the lives of virtually all of the City's citizens. By focusing on sea level rise at the expense of other climate change impacts, the City could be giving inadequate attention to additional risks and opportunities associated with climate change resilience.

Recommendation Two: To make the entire planning process as effective as possible, especially as it relates to advancing resilience across the City, the following is recommended:

- Implement a comprehensive process to link all planning efforts to resilience, economic development, and financing. This is especially important in regard to planning processes that have a direct impact on budgeting and finance including the Capital Improvement Planning process. This function should be implemented and coordinated by the resilience director.
- Use the planning process to create more effective financing linkages among critical infrastructure needs. Specifically, the Watershed/Stormwater/Green Infrastructure plan and its associated financing processes should serve as the foundations for establishing a codified water resilience program, which would address sea level rise, tidal flooding, and catastrophic weather events.
- Expand the city's planning efforts to include a broad array of resilience issues, threats, and opportunities. This should include climate change mitigation efforts, as well as threats and impacts to the built environment.
- Create a direct link between the resilience planning efforts (preferably implemented by a resilience director) and the City's economic development office. Successfully and comprehensively addressing resilience issues will require linking financing efforts to the City's economic development processes. In other words, it is essential that City leaders use resilience as an economic drive rather than a financing cost. Ultimately, the City's move towards resilience should be a move towards expanded economic development.

Financing Systems Assessment. This assessment of the City's financing systems focused two primary tasks: analyzing the City's fiscal budget in regard to water resilience; and, analyzing the City's stormwater program. It should be noted that the City's administration and financing systems in general are well run and function effectively. This assessment of City processes in regard to water resilience and stormwater management was focused on the capacity to

¹³ The City's new MS4 permit will require it to treat 20% of the impervious surface not yet treated to the maximum extent practicable.

allocate resources and tie investment to infrastructure plans, not on the capacity of the financing processes.

Two key issues are highlighted. First, though there has been a push towards climate change resilience planning, as was mentioned above, those plans have not resulted in investment. This examination found no evidence of investments in water resilience or climate change adaptation. Second, though the City is collecting more than \$840,000 annually through its stormwater fee, there are very few stormwater projects in the City's Capital Improvement Plan. In other words, the entire fee revenue is supporting ongoing operations and maintenance of the stormwater program and system. So, while the City's financing systems are well managed, there is simply not enough revenue being generated to support water resilience and stormwater management projects. This of course makes it impossible for the City to coordinate water resilience and stormwater management financing with other infrastructure financing efforts and needs.

Recommendation Three: The City of Annapolis has the financing infrastructure and foundation to establish an effective and efficient water resilience financing program. As stated above, the assumption going into this project is that an efficient and effective stormwater financing system provides the foundation and framework for an equally effective resilience financing system. Based on this assessment, the City of Annapolis should implement three changes to their stormwater program:

- Consolidate leadership and implementation. This would reduce redundancy among departments and agencies. The most efficient stormwater management programs are administered as enterprise programs, where all activities are contained within a single program, with the support of dedicated revenues, primarily from fees. However, many smaller communities like Annapolis do not have the scale to make a dedicated stormwater enterprise program work efficiently, requiring essential employees and positions to serve multiple programs within the City government. Though establishing a formal enterprise program is not realistic at this time, the City can adopt another enterprise program characteristic, which is to ensure that all stormwater management functions and activities are consolidated into one program within the Department of Neighborhoods and the Environment. In other words, stormwater management should be the exclusive function of the stormwater management program, thereby removing those activities from other agencies across the City. At the very least, stormwater management activities implemented in other agencies should be coordinated by the stormwater program manager.
- Establish sufficient and dedicated revenue streams, primarily in the form of fees. The City of Annapolis does have a stormwater fee that generates approximately \$840,000 per year in revenues. The fee was increased within the last several years, which essentially doubled the associated revenue. In spite of this increase, however, the fee revenue is only sufficient to cover program management costs, which does include some maintenance of the existing stormwater system. There is essentially no revenue supporting capital projects at this time. As a result, the City's new watershed/stormwater plan cannot be implemented without an

increase in revenue, either from the fee or from the general fund.

- Establish a market-based stormwater financing process. Given the insufficient revenues supporting stormwater activities, it is essential that the City establish processes that reduce costs, create efficiencies, and incentivize the market and the private sector to engage to the maximum extent possible. The City has an opportunity to reinvent their procurement and stormwater investment processes in a way that creates the greatest positive impact on the City, in terms of maximized environmental uplift in the form of improved water quality, economic impact and development, and the advancement of community resilience. In this way, the stormwater program can serve as the foundation of a resilience financing system that is managed through competitive sourcing mechanisms and processes. This is the first and perhaps most important step in embedding stormwater management and resilience into the economic fabric of the community.

Engaging the Private Sector Assessment. Every community strives to be more resilient and economically vibrant, but this will only happen when the market, and by definition the private sector are engaged. Therefore, market activity in regard to resilience is an indication that the community has embraced the issue, either explicitly or implicitly and as a result incorporated resilience into the economic fabric of the community.

Recommendation Four: The City of Annapolis has an active business community and that stakeholder group is represented within City government by the Department of Economic Development (DED). Therefore, DED needs to be a formal participant in water quality restoration and climate resilience efforts within the City. Specifically, City leaders need to engage key industries in the resilience planning and financing effort including but not limited to the maritime industry, tourism, recreation, and hospitality.

Part 6: An Opportunity to Accelerate Community Resilience Financing

The EFC learned a great deal as a result of the Annapolis resilience finance study. This foundational investigation documented and identified Annapolis' traditional stormwater financing strategies and illuminated the key financing elements and processes necessary to move the City from the status-quo of financing costs to investing in economic development and community resilience.

In order to assist communities in this transition and to establish the conditions that are necessary to enable and incentivize investment in community resilience, the EFC plans to assemble an array of experts and stakeholder interests—local leaders, policy experts, impact investors, traditional investors, and other finance professionals—to identify resilience investment opportunities that will provide the foundation for local and regional economic development.

The EFC, in partnership with the UMD School of Public Policy's Center for Global Sustainability, will act as the convener and leader of this collaborative network. The Collaborative will focus on accelerating public and private investment in projects that enable communities to become more resilient to the impacts of climate change by improving the capacity of local governments and reframing climate change goals to maximize economic, social, and environmental returns on investment.

The EFC envisions the Collaborative to have three main core program components: direct community engagement, community investment, and an innovation incubator.

Through direct community engagement, the EFC will develop a Resilience Financing Checklist, which when implemented will guide communities through establishing the enabling conditions for incentivizing resilience investment. In addition, the Collaborative will link local leaders with multi-disciplinary teams of experts who can assist them in institutional analysis, resilience planning, and leadership development. The Collaborative will leverage EFC's expertise and success in stormwater financing, sustainability and open communication platforms to help frame the direct community engagement component.

The EFC will also develop an investor pool recruitment process to enlist financiers that recognize both the financial and social/environmental value of the Collaborative's mission. Using the Resilience Financing Checklist as a road map, the Collaborative will provide investors with an assessment of the status enabling conditions necessary for achieving the combination of an appropriate return on investment and long-term community resilience. The Collaborative in partnership with investment partners—public, private, foundation, impact, and traditional—will then identify and launch innovative resilience projects in pilot communities for the community investment component.

Lastly, the EFC will identify opportunities for academic research which will accelerate investment in resilience. Research and analysis from the Collaborative innovation incubator will help inform the strategies and interventions that address multiple resilience financing and economic development opportunities within local communities. The Collaborative will convene advisory committees, implement targeted issue forums, evaluate the impact of interventions within pilot communities, and develop data analysis support tools for the innovation incubator component.

Work with the City of Annapolis provided the first step in developing a comprehensive resilience financing program at the EFC. The study highlighted the importance of assessing the capacity and effectiveness of City programs, establishing a guide for the City's investments in this area, and creating a structural continuity between its resilience financing and economic development plans. It also touched on the need for developing strong collaborative leadership dedicated to stormwater management and resilience issues across the City in order to position resilience as the primary issue connecting the public and private sectors.

The Collaborative will build on this this understanding to focus on investment and economic development and set the foundation for a unique, positive approach to climate change and mitigation, which will in turn result in a highly effective process for engaging community leaders. The Collaborative has the potential to be a transformational program that will address the enabling conditions and ensure that money is invested in a manner that facilitates a resilient and vibrant community and economy all while addressing the impacts of climate change.