

## Flood Water Management Using Public-Private Partnership (P3) Contracting Initiatives

[RSA Protective Technologies, LLC](#), is an innovator in large scale Civil Infrastructure inventions for the last nineteen years. We solve force mitigation challenges for the Federal Government, the City of New York, and Fortune 50 companies, including Times Square, The United Nations, Goldman Sachs HQ, and the Barclays Center. Much of that work has been innovative in flood control. **RSA PT** has a strong competitive position in that market.

- ✓ The RSA Movable Barrier Flood Wall System series of patented concrete flood walls are designed to save lives and protect property. These floodwall systems form a suite of solutions ranging from coastal and in-land solutions to water channel control. This link will demonstrate nine unique large scale flood wall designs with RSA and Partners capabilities: [www.rsaprotect.com](http://www.rsaprotect.com)
- ✓ RSA has received the world's first patent on flood control panels for sidewalk vents. RSA's invention quickly covers ventilation shafts providing flood control for basements and vaults. The installation of five units takes eighteen minutes.
- ✓ RSA's patented invention custom fits subway stairwell entrances. These subway stairwell flood protection devices can be installed in twenty minutes.
- ✓ An RSA invention seals the [Staten Island Siphon Tunnel](#) in under four hours to prevent the tunnel from flooding in the event of another hurricane.



- ✓ RSA and Meuser Rutledge Consulting Engineers ([www.mrce.com](http://www.mrce.com)) received a patent on the design of a [portable hurricane floodwall system](#). Currently, it is the world's only hurricane-rated removable floodwall system.

P3 funding of water projects is an emerging area in which most clients do not yet have



experience and technical expertise. RSA's solutions provide a sound foundation for P3 funded projects.

## **Public-Private Partnerships (P3)**

P3 offers both risk reduction and cost management advantages to public clients. The World Bank provides an excellent overview in this [article](#). The following is a limited excerpt from the World Bank description that provides a foundational footing for the remainder of this paper. Several financing options can be employed, including:

- ✓ **Concessions Projects** - A Concession gives a concessionaire the long term right to use all utility assets conferred on the concessionaire (RSA and partner), including responsibility for operations and some investment. Asset ownership remains with the public authority, and the authority is typically responsible for the replacement of more considerable assets. Assets revert to the public authority at the end of the concession period, including assets purchased by the concessionaire.
- ✓ **Build-Operate-Transfer (BOT) Projects** - typically used to develop a discrete asset rather than a whole network and is generally entirely new or greenfield in nature (although refurbishment may be involved). In a BOT Project, the project company or operator typically obtains its revenues through a fee charged to the utility/ government rather than tariffs charged to consumers. In common law countries, some projects are called concessions, such as toll road projects, which are new build and have several similarities to BOTs. RSA intends to introduce a taxable "flood road" for specific projects as a means for long term ROI.
- ✓ **Design-Build-Operate (DBO) Projects** - In a Design-Build-Operate (DBO) Project, the public sector owns and finances the construction of new assets. The private sector designs, build, and operates the assets to meet specifically agreed outputs. The documentation for a DBO is typically more straightforward than a BOT or Concession as there are no financing documents and will typically consist of a turnkey construction contract plus an operating contract, or a section added to the turnkey contract covering operations. The operator is taking no or minimal financing risk on the capital and will typically be paid a sum for the design-build of the plant, payable in installments on completion of construction milestones, and then an operating fee for the active operating period. The operator is responsible for the design and the construction as well as operations. So, if parts need to be replaced during the operations period before its planned life span, the operator is likely to be responsible for replacement.

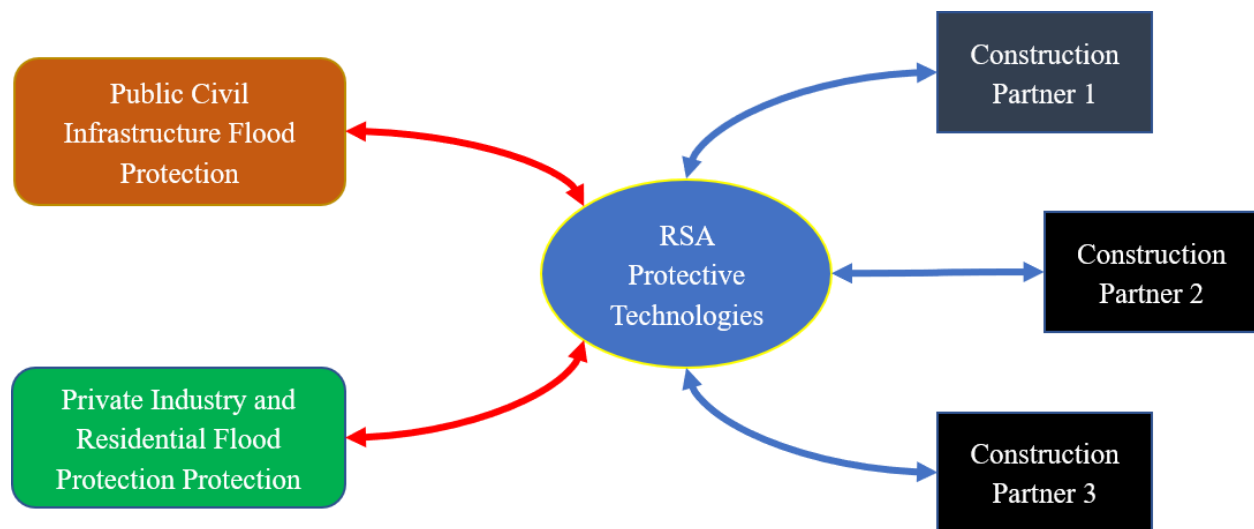
## **RSA Protective Technologies LLC Extended Business Strategy**

The current climate change conditions offer many opportunities for an expanded flood control market across the country. Inland flooding now competes with low-elevation areas along all three shorelines. From the RSA perspective, that drives a need to develop a new business strategy.

RSA owns the patents and proprietary information about the flood control products we have either invented or developed. We do not, however, have the massive construction capacity or expertise to service the potential market, both public and private. Thus, we intend to develop partnerships with existing construction companies that have seen a downturn in business due to the COVID 19 pandemic. The truth is, more pandemics and climate change impacts are coming, and we need to be prepared. The market is ripe for some beneficial partnerships to be brokered in which,

## RSA with Public Finance

1. RSA will market for the public agencies (EPA, FEMA plus state and local wastewater/civil infrastructure (Water treatment plants et al.)) that have access to Federal and State money to address the floodwater concerns to critical infrastructure.
2. Once clients are contractually committed to a project, RSA will develop the site and project plans, including architectural drawings for completing the project.
3. RSA will then seek out construction firms with excess capacity of both heavy equipment and experienced workers to execute the contract.
4. RSA considers this strategy to be both a risk reduction effort for the company and a cost advantage in partnering with experienced companies. These partnerships may also serve the construction companies; in that, it provides a chance for growth beyond their traditional business since climate change is a long-term issue. Coastal and low-elevation flooding is projected to get worse. All we have to do is look at the city of Houston, Texas, and their experience with the last several hurricanes and tropical storms that devastated both civil infrastructure and residential areas. Lake Charles, Louisiana, is the latest victim with a chemical factory being severely damaged by floodwaters.



*RSA Business Strategy*

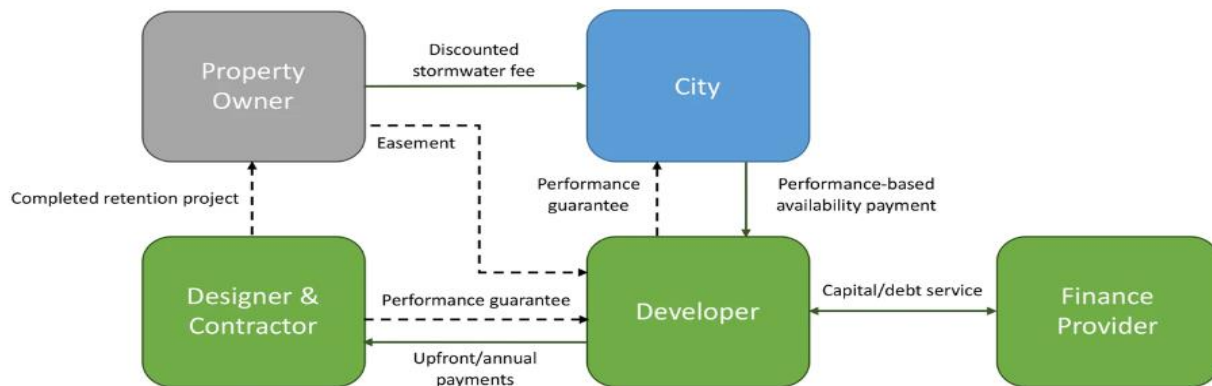
## RSA with Private Finance

If we read the latest EPA Environmental Financial Advisory Board (EPUB) [report](#) dated March 30, 2020, RSA must prepare for flood control projects that will require private funds to make the project possible. Under such circumstances, RSA will develop relationships with financial institutions and combine privately funded contractor installer contracts for long term operations and maintenance (O&M) for each installation.

Local stormwater O&M costs have been increasing steadily. Many communities, particularly small or disadvantaged neighborhoods, are often subjected to the most significant impact from stormwater runoff, and a lack of a sustainable source of public funding for their stormwater programs. The inability of some communities to establish and maintain sustainable revenue sources (such as user fees) limits their access to low-cost debt financing to help them meet the challenge of paying for stormwater infrastructure and management. Further, communication programs are needed to inform local officials and the general public about the benefits of private investment in stormwater infrastructure and the cost of inaction.

There is a significant gap in the availability of public funding from the EPA to the tune of \$7 – 10 billion annually to invest in programs that support the stormwater (flooding) sector. That money is available in the private sector. Still, it will require a different contracting and operations approach, which RSA will pursue as part of our partnership with major construction firms.

Publically designed, privately funded [Stormwater Performance Projects](#) (SPP) defined by using best value selection via the public RFP bidding process exhibiting a de-risked delivery process, and a performance-based payment system will result in a much better deal for the public agency and ratepayers. The agency can assess project costs and retention benefits before making any commitments, handoff project delivery risk, and only pay for projects that deliver the promised services. The public is protected at every step of the process.



The private sector would be eager to respond to such an innovative solicitation: Ample capital is ready to invest in water projects; designers and contractors are willing to deliver innovative

projects (including green initiatives). Construction and technology companies are already building the sensors and software that will enable an accurate pay-for-performance model.

RSA will be able to offer beneficial pricing from perceived overlaps and repetition of tasking. The engineering on the projects will be a custom setup for each job with typical land management practices for construction, materials, assemblies, and fabrication commissioning. RSA will oversee all long-term maintenance and operations.

## The Business Opportunities and Financial Status for Flood Control Projects

One must dig deeply into the actions of the Environmental Protection Agency’s (EPA) [Water Infrastructure and Resiliency Finance Center](#) to get some answers on financing for projects that involve stormwater management at the federal, state, and local governmental levels. Within the EPA’s Water Finance Center, we can get a sense of the funding and types of projects handled using federal EPA dollars that are distributed to the state and local level via various financial institutions by looking over the [Water Finance Clearinghouse](#) for stormwater-related work. The chart excerpt below shows the format and general content for clearinghouse information.

<b>Program Name</b>	<b>Source</b>	<b>Description</b>	<b>How To Apply</b>	<b>Current Funding Level</b>	<b>Contact</b>
<a href="#">North Dakota Rural Community Grant (RCG) Fund</a>	AgriBank	Disbursements through this fund are designated for projects and programs in rural communities in western North Dakota to facilitate infrastructure improvement and/or development initiatives encompassing housing projects; health, safety, and environmental programs; medical facilities; educational programs; and more.	Project must be located in rural communities in western North Dakota. Apply for the funding at this web address: ( <a href="https://webportalapp.com/sp/login/rcgf_submission">https://webportalapp.com/sp/login/rcgf_submission</a> ).	Grants up to \$50,000 are available.	(651) 282-8800 Farm Credit System Fill out this form to contact the organization: <a href="https://info.agribank.com/communityinvolvement/rcgf/Pages/Ask-a-Question.aspx">https://info.agribank.com/communityinvolvement/rcgf/Pages/Ask-a-Question.aspx</a> 30 E. 7th Street Suite 1600 St. Paul, MN, 55101
<a href="#">Alaska Community Development Block Grants (CDBG) Program</a>	Alaska Department of Commerce, Community, and Economic Development - Division of Community and Regional Affairs (DCCED-DCRA)	Community Development Block Grant (CDBG) funds may be utilized to address a wide variety of community needs, including construction or renovation of various infrastructure projects such as water, wastewater, and solid waste facilities, streets, and flood control projects. The funds must be used for activities that either benefit low- and moderate-income persons or address community development needs that have a particular urgency.	Each applicant is expected to consult with Community Development Block Grant (CDBG) Program staff about project eligibility and structure prior to submission of an application. Please see the application handbook online for full application details. Applications can be accessed online.	Community Development Block Grant (CDBG) competitive grants are single-purpose project grants, a maximum of \$850,000 per community. Approximately \$2 million is available for competitive grants for the Federal Fiscal Year (FFY) 19 grant cycle.	Pauletta Bourne <a href="mailto:pauletta.bourne@alaska.gov">pauletta.bourne@alaska.gov</a> (907) 451-2721 Alaska Department of Commerce, Community, and Economic Development - Division of Community and Regional Affairs (ADCCED-DCRA) 550 W 7th Avenue Suite 1650 Anchorage, AK, 99501
<a href="#">Arizona Community Development Block Grant (CDBG) Program</a>	Arizona Department of Housing (ADOH)	Community Development Block Grant (CDBG) funds may be utilized to address a wide variety of community needs, including construction or renovation of various infrastructure projects such as water, wastewater, and solid waste facilities, streets, and flood control projects. The funds must be used for activities that either benefit low- and moderate-income	Deadlines vary; please visit the website for specific details. Notice of Funding Availability (NOFA) is posted online. Notice of Funds Availability (NOFA) is announced here ( <a href="https://housing.az.gov/documents-links/publications">https://housing.az.gov/documents-links/publications</a> ).	Arizona Department of Housing (ADOH) receives approximately \$9,000,000 in Community Development Block Grant (CDBG) funds. Funding for each project varies.	Kathy Blodgett <a href="mailto:kathy.blodgett@azhousing.gov">kathy.blodgett@azhousing.gov</a> (602) 771-1021 Arizona Department of Housing (ADOH) Fill out this form ( <a href="https://housing.az.gov/about/contact-us">https://housing.az.gov/about/contact-us</a> ) 1110 W. Washington Street Suite 280 Phoenix, AZ, 85007

			persons or address community development needs that have a particular urgency.			
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The list is fully searchable via keyword to look specifically for wastewater and flood control projects. The information in the chart is also linked to comprehensive information on how to apply for grants and what kind of contracting methods are used (such as P3).

If you want to cut to the chase and look at a yearly overview of the funding, there is an [Environmental Financial Advisory Board \(EFAB\)](#) that issues [a report](#). The most recent EFAB report: “[Evaluating Stormwater Infrastructure Funding and Financing](#)” gives you the bottom line on the status of these projects.

Information about the use of Public-Private Partnerships (P3) can be found here as part of the Water Infrastructure Finance and Innovation Act ([WIFIA](#)). The Water Finance Center provides information to communities interested in establishing public and private partnerships for innovative financing.

Public-Private Partnerships, Public-Public Partnerships, and Performance-Based Infrastructure project delivery models (“P3”, “PPP” or “PBI” -- together “Alternative Project Delivery Models”) are an alternative delivery method for building out needed water infrastructure. Projects utilizing P3s span the water sector in size, location, and financial profile. Several P3s have been implemented nationally, and many have closed internationally.

EPA funding profiles for each fiscal year can be found [here](#). The EPA FY 2021 proposed budget is \$6.658B.

## **RSA Point of Contact**

Rick Adler  
 President  
 RSA Protective Technologies, LLC.  
 223 Independence Drive  
 Claremont, California 91711  
 (909) 946-0964  
 CELL: (909) 908-2585  
[radler@rsaprotect.com](mailto:radler@rsaprotect.com)  
[www.rsaprotect.com](http://www.rsaprotect.com)