


FROM	NAME & TITLE	Rudolph S. Chow, P.E., Director	CITY of BALTIMORE MEMO	
	AGENCY NAME & ADDRESS	Department of Public Works 600 Abel Wolman Municipal Building		
	SUBJECT	CITY COUNCIL RESOLUTION 17-0052R		

DATE: March 15, 2018

TO

The Honorable President and Members
 of the Baltimore City Council
 c/o Natawna Austin
 Room 400 – City Hall

I am herein reporting on City Council Resolution 17-0052R introduced by Council Members Stokes, Henry, Clarke, President Young, Council Members Scott, Burnett, Bullock, Sneed, Cohen, Pinkett, Schleifer, and Middleton.

The purpose of the Resolution is to call on representatives from the City agencies charged with preparing for and responding to disasters in Baltimore City to appear before the City Council to discuss the current state of Baltimore’s disaster preparedness and how lessons learned from recent disaster responses can be incorporated into Baltimore’s preparedness plans to ensure the best possible response to natural and manmade disasters.

In the event of an emergency due to a natural or manmade disaster, the Department of Public Works has the dual role as a provider and restorer of essential services and as a supporter of overall recovery operations. Depending on the nature and scope of a disaster, returning to normalcy could take days, weeks or months. The recent severe storm events experienced in Texas, Florida, and Puerto Rico are prime examples why preparedness plans should be reviewed and revised on a regular basis to keep them relevant. The Mayor’s Office of Emergency Management (MOEM) plays a key role in identifying which agencies have lead or supporting roles, depending on the particular event. Their *Emergency Operations Plan* provides the overall structure for coordinating agency efforts to address emergency situations in the most effective way possible. MOEM also maintains the City’s *Emergency Operations Plan* to ensure that emergency planning is based on emergency support plans which make clear agency roles, capacities, and resources for responding to and recovery from emergencies or disasters.

Another citywide plan is *The City of Baltimore Disaster Preparedness and Planning Project (DP3)* which is a “...unified approach to hazard mitigation and climate adaptation.” The plan focuses on infrastructure, buildings, natural systems, and public services, to identify existing conditions and vulnerabilities with the goal to build resiliency and disaster prevention approaches and planning into all policies and programs. The Department of Public Works was a participating agency in the development of this plan. Led by the Department of Planning, the DP3 is considered an All Hazards Mitigation Plan by FEMA and is scheduled to be updated later this year.

The Department of Public Works has the responsibilities of supplying potable water to the Baltimore Metropolitan Region, containing and treating wastewater, and managing stormwater runoff and solid waste; all critical functions when faced with disaster on a large scale. Debris management can be an important part of clearing and recovery after a disaster. Managing the types of debris is critical to provide for appropriate and safe disposal of large volumes. If managed well, opportunities for recycling, repurposing, and minimizing landfill impacts can be done. Even short-term interruptions of these vital services are difficult for citizens to endure. Being prepared means knowing the systems and processes, maintaining infrastructure, and planning for future needs and demands on those systems and services.

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The Department conducts and implements various studies, reports and programs to protect, sustain, and plan for the maintenance and advancement of all of the water utilities. The *Comprehensive Water and Wastewater Plan* is a State-required update and 10 year outlook for the City's regional water and wastewater systems. Similar to the 10 Year Solid Waste Plan, the document broadly encapsulates the ability of the City to maintain current infrastructure and its plan for future demands on these systems. The Department also conducts multiple studies focusing on portions of systems, specific facilities or known vulnerabilities.

The water filtration and wastewater treatment plants need to maintain operations; loss of these vital facilities would have a direct impact on public security and health. It is standard practice to have at a minimum a two weeks' supply of all necessary chemicals in case delivery could not occur. In addition, dual power feeds are established to ensure that loss of electricity from one grid would allow drawing power from another. Should all power be lost, generators are the temporary backup source until power can be restored.

The frequency and intensity of recent storm systems are demonstrating that the impacts on communities can be very substantial with long recovery periods. The Department is issuing a Request for Proposals for developing a *Continuity of Operations Plan* (COOP) that will look at all mission critical functions for the water and the wastewater systems, as well as essential supporting and reconstitution activities over a sustained period of time. While completely separate, both water and wastewater systems require power, chemicals, and personnel to keep services functioning. Disasters, natural or manmade, could impact just a few communities, larger portions of these regional systems, or have widespread consequences. The COOP will be developed such that emergency responses for portions of the systems (e.g. pumping stations down) or larger, more impactful problems (e.g. loss of water filtration plant) are able to be employed.

The Department's Office of Sustainable Energy is developing and expanding energy resiliency projects such as solar arrays and combined heat and power plants at these facilities to lessen reliance on traditional power sources. Baltimore has 1 MW of solar photovoltaic at Back River Wastewater Treatment Plant (WWTP). Beyond the solar, the plant has a 2 MW combined heat and power system that provides an average of 15 percent of the electric needed at Back River WWTP and captures heat to supplement the plant. The engines use biogas containing high levels of methane created by the digesters at the WWTP. This gas would otherwise be flared without any benefit. Grants have been received from the Maryland energy Administration to expand this facility.

The Department established an Office of Asset Management (OAM) in 2013 to focus on getting the most value from each asset and ensuring that financial resources are effectively targeted to optimize the efficiency and reliability of each utility. OAM developed a framework and methodology to assess condition and criticality, identify system redundancies or risk mitigation factors, and determine an overall asset level risk score. This methodology is being applied in a consistent way across various water, wastewater and stormwater asset classes to inform maintenance and capital investment decisions. OAM determines the most appropriate intervention method for high risk assets, which could include renewal/replacement/rehabilitation, or operations and maintenance solutions such as proactive inspections. Identified at-risk assets can be bundled into common projects for annual capital and maintenance program development.

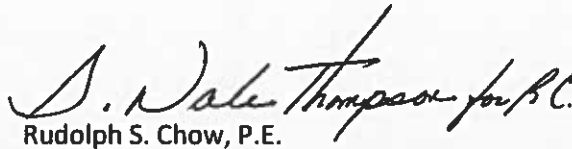
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Citizens have a big role to play in preparedness. MOEM has a great webpage that provides simple, effective suggestions for how our residents and businesses can be prepared and aid in their own recovery. Communications and guidance with a prepared populace will make our collective job to secure normalcy much smoother and faster.

As described in this report, the Department of Public Works has a system of plans and mechanisms in place to respond to disasters and is always looking for opportunities to improve and to collaborate. The Department of Public Works will be present at the upcoming hearing on City Council Resolution 17-0052R to discuss the state of Baltimore's disaster preparedness.

A handwritten signature in black ink that reads "R. S. Chow for P.E." with a stylized flourish at the end.

Rudolph S. Chow, P.E.

Director

RSC/MMC