



Stephen C. Costello Testimony

Committee on Oversight and Reform

Subcommittee on Environment

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Good morning Mr. Chairman and Honorable Committee Members. My name is Stephen Costello. I am the Chief Recovery Officer for the City of Houston, representing Mayor Sylvester Turner. Thank you for the opportunity to testify before the Subcommittee on Environment regarding Houston's recovery in the aftermath of Hurricane Harvey.

Before I address the topic, I would like to use this opportunity to give the Committee members information on my background, which has also been provided to the committee as part of my written testimony package. I started my career in the storm water and floodplain management field in 1977, where I was employed as a civilian by the U.S. Army Corps of Engineers Galveston District. Several years later, I entered the private consulting industry and ultimately founded my firm in 1991. In 2009, I was elected to the Houston City Council as an At-Large Council Member where I served 6 years. During the 6 years, I served on several committees including 5 years as Chairman of the Budget Committee. As an engineer, I advocated for infrastructure investments and the passage of the voter approved Renew Houston (now Build Houston Forward), a dedicated fund for storm water drainage investment. In 2015, facing term limits, I ran for Mayor and subsequently I returned to private practice.

During the early months of Mayor Turner's tenure, we had several meetings to discuss my return to the City. I was extremely honored to have the Mayor consider me since several months earlier we had been political opponents competing for the same job. While still discussing the opportunity, on April 16th, 2016, the city experienced its third flood event in the span of 18 months. We locally refer to this event as the Tax Day Flood. Several days later we agreed that I would join the Mayor's staff as the Chief Resilience Officer focusing on flooding and drainage issues. Publicly, the Mayor gave me the title "Flood Czar". My main duties were to interface between agencies - County, State and Federal - on flooding and drainage projects and internally between multiple City departments. Following Hurricane Harvey, I fully engaged with the Harvey Recovery Leadership team, led by Marvin Odum. In November of 2018, I took on the title of Chief Recovery Officer, and while I continue to focus on flooding and drainage projects, I also coordinate the City's recovery efforts from Hurricane Harvey.

Houston Experience

Houston experienced three “500-year” floods in three years and we have been granted an opportunity to fundamentally change how we recover and build. As Mayor Turner has stated that we can’t just build back as that would be building for failure, we must build forward in order to become more resilient.

This leads us to the main question of today’s panel. Are we safer today than Pre-Harvey? And the answer is a resounding no. Before I focus on specific Harvey recovery efforts, I want to take the time to describe actions that the City has taken. While we continue to advance, we still have plenty of work to do to reach our goals, and it is not letting up anytime soon. After three major storms in three years, we must look at ways in which Houston can adapt to the changing environment.

We have to first start with addressing floodplain distances. Since Harvey, we revised the existing Chapter 19 requirements to protect our citizens from future flooding events. About one-third of structures in the 100 and 500-year floodplains were affected by the flooding, compared to the 19% of houses outside of those floodplains. 38% of households within the 100-year floodplain lines were impacted, even though they complied with existing regulations. Because we care about the safety of our communities and their people, we implemented some of the most restrictive floodplain development rules in the nation. One of the major changes requires new structures in the 100 and 500-year floodplains to be at least 2-feet above the 500-year elevation. If these were implemented before Harvey, it is estimated that 84% of homes would have been protected from the floodwaters, which is equivalent to 171,000 families. To go lower would have put too many structures at risk, and too high would have diluted the benefits against the costs of the regulation.

We have also made changes to our design criteria. Through extensive engagement with community leaders and experts, we have revised detention and drainage criteria to ensure the City’s standards are conducive to responsible development which does not negatively impact drainage and empowers the city to effectively and consistently apply and enforce drainage-related development rules. Changes include updated detention, fill, and right of way encroachment requirements.

We’ve also taken strides to advance local funding programs. In 2018, voters reaffirmed Houston’s street and drainage program, which provides approximately \$6 billion in funding for drainage related improvements over the next 20 years. Last August, voters also approved \$2.5 billion in bonds to finance flood damage reduction projects within Harris County over the next 5 to 10 years. A large number of projects are being prioritized, planned and built with this funding. The passage of the bond program has further strengthened the collaboration with Harris County Flood Control District, where we continue to align efforts to maximize benefits and leverage local and federal funding.

In the efforts to be more resilient, we have also pushed forward a green infrastructure incentive program which has allowed the City to work with private developers to encourage the use of green infrastructure around the City. Over the past year, we conducted a study that reviewed incentive programs around the U.S. and engaged with private developers, allowing us to develop four incentives. The suite of four regulatory, timing, recognition and financial incentives that are being considered for implementation will be the first step into a robust program in which the City can lead by example to alleviate flooding and improve water quality.

The National Oceanic and Atmospheric Administration has updated the precipitation frequency estimates for Texas. This new data, referred to as Atlas 14 data, has redefined and provided a more accurate description of the rainfall depths and durations for different storm events. For example, the region's 100-year, 24 hour event was 12-13 inches on average. The new estimates increase rainfall amounts from 4-5 inches to 17 inches. This increase has triggered evaluation of a new set of design standards, creation of new floodplain maps, increased collaboration with local agencies, and an emphasis on identifying a set of mitigation and adaptation strategies throughout the region.

But we are also leading by example. In conjunction with the Houston Advanced Research Center (HARC), the City has started working on our first community-wide Climate Action Plan (CAP). This plan will act as a roadmap for the City, businesses, residents and communities to reduce their GHG emissions and meet the goals of the Paris Agreement—carbon neutral by 2050. Additional work through the City's Sustainability Office brings forth solar power goals, greenhouse gas reductions goals, and green power programs that are being met with the sustainable fuel and energy efficiency programs. In 2018, the City of Houston used nearly one billion kilowatt-hours (kWh) of green power, which represents 92% percent of our total energy consumption (12% solar and 80% wind). As a result, for the 3rd year in a row, Houston was named the #1 municipal user of green energy in the nation by the United States EPA. Houston is also #7 on the EPA's overall Top 100 green power users.

We continue to move forward by educating Houstonians at every opportunity on flooding issues and risks. It has started with various speaking engagements in which the importance of acquiring flood insurance is highlighted to all Houstonians. The risk of flooding at home and on the road is also being addressed through the development of better mapping tools and flood alert systems, including early warning systems. Additional engagement has allowed us to convey the message to residents to learn about the specific watersheds they live in to understand how they react after rainfall, as well as specific projects that are underway.

Federal Support

Our successes are not without complications. We have taken strides to achieve flood resiliency in Houston, but the long road to recovery continues. I'd like to provide some accomplishments and struggles in the recovery process with federal agencies since the tragic storm hit Houston back in 2017. The way Houston recovers will set the foundation for working towards resilience for years to come.

We have been successful in receiving \$1.3 billion from the Community Development Block Grant – Disaster Recovery (CDBG -DR) from the United States Department of Housing and Urban Development (HUD). The City is helping Houstonians get back on their feet through several programs designed to address many aspects of the rebuild and recovery process. Anchored by the Harvey Homeowner Assistance Program, the City of Houston is prepared to address the needs of Houstonians through their Homebuyer Assistance Program, Single & Multi-Family Development, Small Rental Program, as well as other Public Services. When possible, resilience and sustainability components are also being factored. For example, as the multi-family program is developed, key resilience standards for building footprint, equity, and quality of life are being taken into account.

We also anticipate another \$1 billion from HUD specifically for infrastructure and mitigation, which would allow the City to address local drainage issues within neighborhoods and protect housing investments.

Integrated solutions that maximize co-benefits and are green-oriented are being considered to be at the core of this program, where applicable. Although the City is prepared to create a program for mitigation and infrastructure, the February 2018 appropriation is still pending the release rules and guidelines for the use of these funds. This delay has hindered the ability for the City to provide alternatives for mitigation in neighborhoods that need it the most. Through the passing of the disaster relief bill, it is my hope that the rules are released prior to the 90 days deadline.

Our interactions with FEMA have also allowed us to focus on recovery of City assets and more transformational change. The Public Assistance program allows for reimbursement of debris removal, emergency response activities, repair, reconstruction and mitigation efforts for City-owned assets of two primary departments, Houston Public Works and General Services Departments.

The PA program is 90% funded by FEMA; 10% by local-matching sources.

We have prepared a chart that identifies over 45 steps in the process, starting from once a damage is identified to when it is approved and obligated. Multiple reviews, extensive document verification and concurrence on dollar amount and scope of work present major delays in obtaining final approvals. To date, we have estimated approximately \$2 billion in damages, out of which \$366.5 million are processing through the grants portal, and approximately \$186 million have been received by the City. Through the process, over 332 buildings have been inspected for FEMA-funded rebuilds. Only about 2% of these inspections are in the construction phase, while 97% are still in the planning phase. The delayed progress in pushing them to the execution phase has required tight coordination with FEMA and TDEM where we currently conduct weekly and bi-weekly meetings with two review groups to expedite.

The second FEMA program that I would like to discuss is the Hazard Mitigation Grant Program which allows the City to focus on projects that will mitigate future flood potential and reduce the risk of loss of life and property. HMGP is typically funded 75% by FEMA; 25% being provided by local-matching sources. We have submitted five applications for large-scale transformational projects and individual home mitigation totaling approximately \$350 million. These projects are under review by the Texas Division of Emergency Management and FEMA, for which three out of the five applications have been pushed forward. We are awaiting final determination on award of these projects which must follow the final review process through the Office of Management and Budget.

The City has encountered several constraints with the HMGP program which have delayed recovery. Having to resolve certain issues beforehand has created delays in the application process but will also have an impact in the delivery of the projects once approved. The two that will impact the timeline for delivery the most are authorization of pre-award activity and project phasing. FEMA has a policy that does not allow for reimbursement of certain costs incurred before grant approval. While FEMA has the authority to allow pre-award costs, it has done so on a limited basis. One example is post-Katrina with Louisiana and Mississippi for mitigation of residential and commercial structures. The City has sought authorization of pre-award costs, including property and right-of-way acquisition, which are critical to meeting the HMGP project timeline of 36 months. However, this authorization has not yet been granted.

Another delay in the process is FEMA's project phasing requirements. FEMA considers project phasing to be a two-step process: the first, is for design and permitting, and the second is for construction, where all design must be completed prior to the start of the construction. This method is not favorable for larger-scale

projects as typically these phases are performed simultaneously. Section 404 of the Stafford Act does not appear to prohibit project phasing. However, the requirement from FEMA has led to major delays in progress applications. Take the Inwood Forest application for example, where the scope of work and project plan had to be modified and resubmitted despite having design plans for construction of the first phase of the detention completed. Following this model, work on site would be delayed until the entire design of the basins is complete, continuing to place individuals at risk.

Mr. Chairman and Committee members. Houston has taken a leap in advancing and leveraging recovery programs to achieve flood resilience and adapt to a changing climate. Our goal is to continue to collaborate with local, state, and federal agencies to advance recovery projects and partner with organizations to gather data, plan roadmaps and engage the public to make Houston safer, sustainable, and stronger.

Thank you for the opportunity to testify this morning. I look forward to any questions from the Chair or Committee Members.