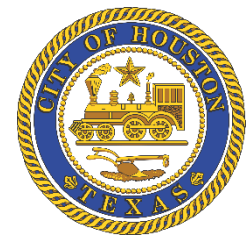




Recovery and Resilience: Hurricane Harvey Update

OCTOBER 31, 2017

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CHIEF RECOVERY OFFICER



Post Hurricane Harvey, Houston has a large and significant challenge...

Hurricane Harvey is the worst rainfall disaster in US history

Harvey is a 1,000-year flood event unprecedented in scale

Harvey is one of the costliest disasters in U.S. history, and most of the victims have no flood insurance

- Major News Outlets, Aug 2017



Major flood damage vs. wind alone:
2.6K miles of City of Houston roadways with standing water



Community displacement: >90K Houstonians reported not living in their homes

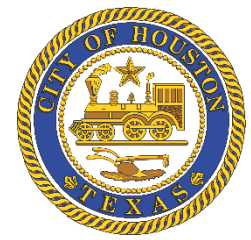


Our mission and vision focus on recovery and resilience

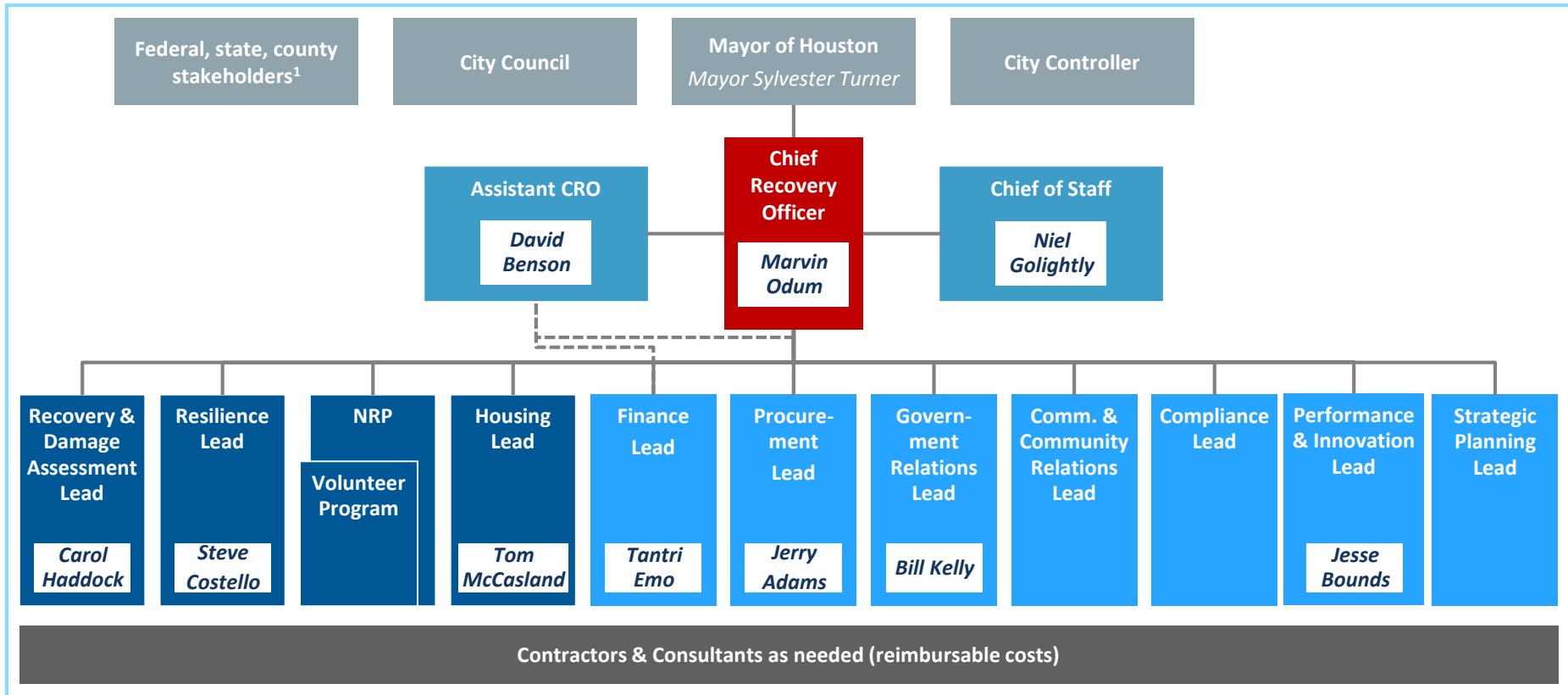
The mission of the recovery effort is to secure and deploy disaster resources to **accelerate Houston's recovery, strengthen Houston resilience**, and **enhance the quality of life and economic** vitality of Houston and its people.

*"This is a defining moment for the city of Houston. **It's not enough for us just to rebuild** in the same way, in the same place. If we do that, then we will miss the mark and quite frankly we will miss the opportunity this storm has afforded us."*

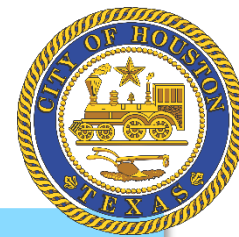
-- Mayor Turner



Houston's Recovery Team



¹ Federal incl. legislative, HUD, FEMA, relevant agencies, etc; State including Governor Abbott, Texas Recovery lead J Sharpe, etc; County includes Commissioners, Judge Emmett, etc.



Our efforts target housing, infrastructure, and small businesses

Housing



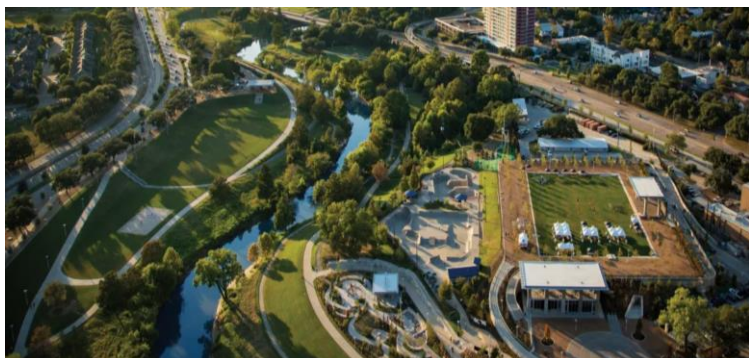
- Unprecedented damage to single and multi-family homes

City facilities and infrastructure



- Severely damaged facilities and infrastructure

Flood mitigation infrastructure

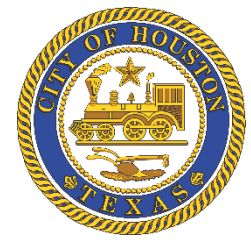


- Many cross-jurisdictional projects identified (e.g. bayous, reservoirs)

Small businesses



- Revitalizing small business across their value chain (e.g. structures, equipment, inventory, earnings loss)



Housing is our number one priority

Housing

Approach

- Standing-up program to cover **both single & multi-family homes**
- **Resources:** RFPs for (1) Damage Assessment, (2) Program Management, (3) Case Management and (4) Construction Management.
- **Key considerations at a granular level:** Damage Assessment & History, Flood Plain designation, Mitigation Options, and Repair/Alter/Replace Options

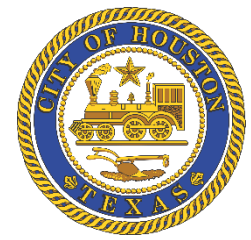
Scale

- To date: **~192K FEMA IA claims**; >40% represent Houstonians in damaged houses
- Reporting to date likely **underestimates damage to multi-family homes.**

Funding sources

- **FEMA funding** administered through City will come first (e.g., direct leasing options)
 - **Individual Assistance Programs** include Multifamily Lease and Repair, Manufactured Housing Options, Partial and Limited Repair
- HUD Funding: **\$7.4B in CDBG (all disasters) in October**, additional \$57.8M to Texas last week, anticipate another appropriation before year-end
- CoH is requesting **Direct Allocation from HUD**

¹ IA claims may represent an individual or a household/family



Significant damage to City facilities and infrastructure

City facilities and infrastructure

Approach

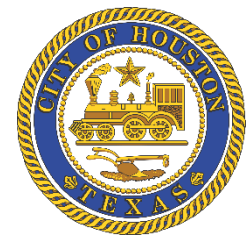
- Damage Assessment is ongoing (TetraTech).... currently doing detailed inspections with FEMA
- **75% +/-** of repairs relatively **standard**
- **25% +/-** of repairs **require deep investigation** (Resiliency)

Scale

- **At least \$2.4B in preliminary damage to city facilities and infrastructure**
 - 11/39 waste water treatment plants were fully inundated with water
 - 5 public buildings incl. City Hall and HPD buildings
- **~2,600 miles of CoH roads had Harvey-related standing water**; equivalent of a roundtrip from Houston to Washington, D.C.
 - **Latent damages could add up to billions more**

Funding sources

- We are in the **early stages of the FEMA process**;
 - **~\$163M** of FEMA funding allocated through State (incl. debris removal)
- **~\$50M** from State disaster relief fund
- HUD CDBG - DR and FHWA funding also possible for some projects
- A **10% match** is required for FEMA funds



Flood mitigation infrastructure required to make Houston more resilient

Flood mitigation infrastructure

Approach

- Collaborate with / advocate for **major infrastructure projects City does not control**
 - Reservoir, bayou projects, Lake Conroe & SJRA , Coastal Spine, infrastructure consolidation
- **No duplication of effort:** Steve Costello is on the team and defines Houston's projects
- Define Flood Mitigation impact at **neighborhood level**

Scale

- **Flood mitigation cost estimates** - \$6B for major bayou projects; \$500M in reservoirs, ~\$500M lake rehabilitation, ~\$500M regional detention, \$5B CoH unscheduled / unfunded projects
- Next steps on projects include:
 - Increase **storm-water management** into Lake Houston
 - **Increase capacity of Buffalo Bayou** downstream of reservoirs
 - **Protect critical water and sewer plant facilities**
 - Develop **in-city watershed detention plan**
 - Determine **non-riverine flood zones**
 - Advance **green infrastructure program**

Funding sources

- FEMA Hazard Mitigation Grants, HUD CDBG – DR, US Army Corps of Engineers, City CIP



The Neighborhood Restoration Program is the “face” of our Housing initiatives

Our neighborhood approach is...



Customized: neighborhood-centric; block by block, house-by-house recovery and resilience



Collaborative: strengthen non-profit impact and foster public-private partnership



Equitable and holistic: need-based delivery of services targeting economy, culture, and environment

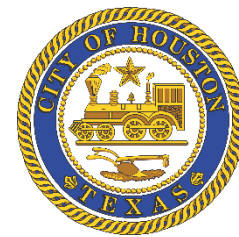


Accountable: metric and data driven oversight for effective and targeted delivery

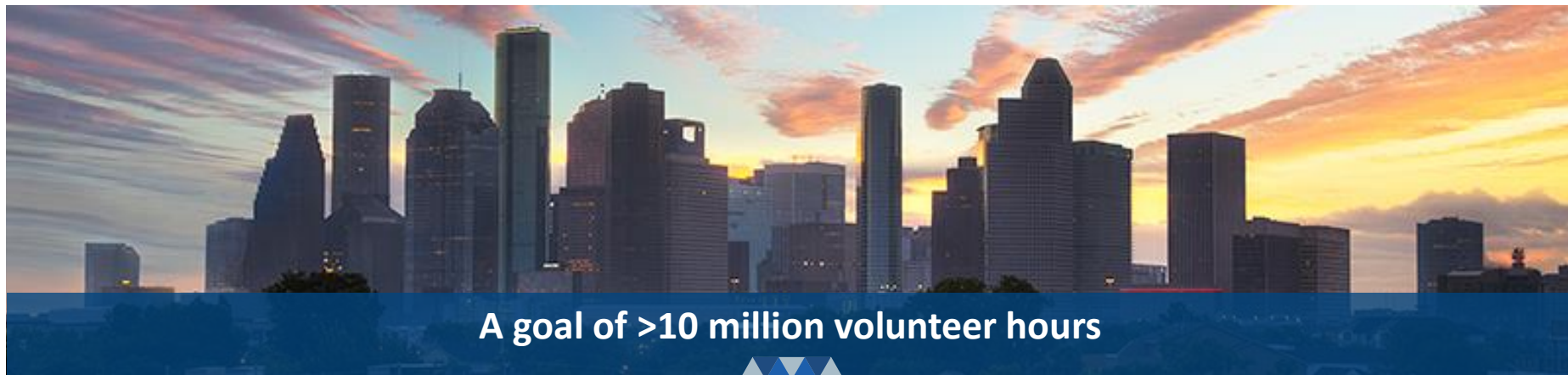
NRP targets Houston neighborhoods



Amy Moody, 10, amid her grandparents' personal effects in Houston area. Amy's grandparents, Martha and Roland Elder, have lived in the home for 48 years – *New York Times, August 30th 2017*



Create a “largest-ever” Volunteer Program that brands Recovery



A goal of >10 million volunteer hours

Organized by
Neighborhood



Efficient



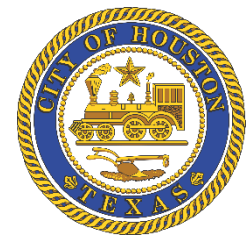
Leverage/assist
non-profits



~6 month
program



- Millions of volunteer hours targeted at high-need neighborhoods
- Ensures CoH’s FEMA “A” and “B” **10% match requirement fulfilled**
 - Recovery Office to request further FEMA match offset programming
- Contributes to **HUD Action Planning**



Funding is complex and there are several key challenges

Funding is complex for 3 reasons



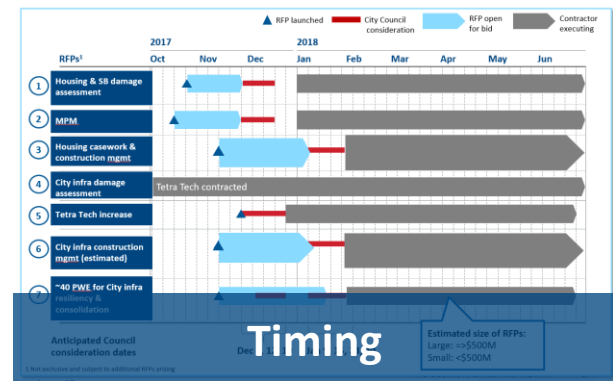
Scale & Choices

- Huge need for funding: homes, infrastructure and small business
- There **will not be enough money** for everything

Who receives funding?	Where does the funding come from?	What are the recovery activities where funds could be used?	Application timing?
Individual Homeowners	FEMA: Individuals & Household Program (IIP)	Disaster housing assistance (HA), other essential needs (OEN), gaps in insurance coverage	60 days
	NFIP	Physical repair costs for flood damage	60 days (waived)
	Private Insurance	Property damage, temporary living assistance, essential needs	
	US Dept. of Labor	Unemployment assistance	
Health & Human Services	USDA	Flood stamps, Food vouchers	
	Disaster response, food assistance, health, housing, child care, rebuilding social services facilities, etc.		
	HUD: CDBG-DR	Supplemental funds used for home reconstruction, rehabilitation, acquisition, infrastructure development	Project based
City of Houston local governments	FEMA: Hazard Mitigation Grant Program (HMGP)	Strengthening buildings, Elevation of flood-prone structures, acquisition of high hazard properties, conversion of land to open use	Project based
	State: Econ. Stim. Fund	Rainy day fund with flexible use	
	FEMA: Public Assistance grants (PA)	Restore a disaster-damaged facility to pre-disaster design, function and capacity (areas include roads, bridges, parks, water control facilities, schools, hospitals, libraries, etc. not included in other Federal aid grants)	30 days from disaster 60 days after ICM
	FEMA: Hazard Mitigation Grant Program (HMGP)	Watershed storage and recovery, floodplain and stream restoration, flood diversion and storage, flood proofing of public buildings (similar to residential)	Project based
	US Army Corp. Engr	Execute public infrastructure projects using funds allocated by FEMA/DA/DOD	
Local government sources	US DOT	Repair of Federal highways (FH&R) & transit systems (T&A)	
	State: Econ. Stim. Fund	State can fund with flexible use	
	FHA	Low interest loans to fund repair and rebuilding of water systems	

Sources

- FEMA, HUD, and US DOT largest sources
- Many others to be pursued
- CoH needs to ensure proper federal consideration & allocation (fair share)

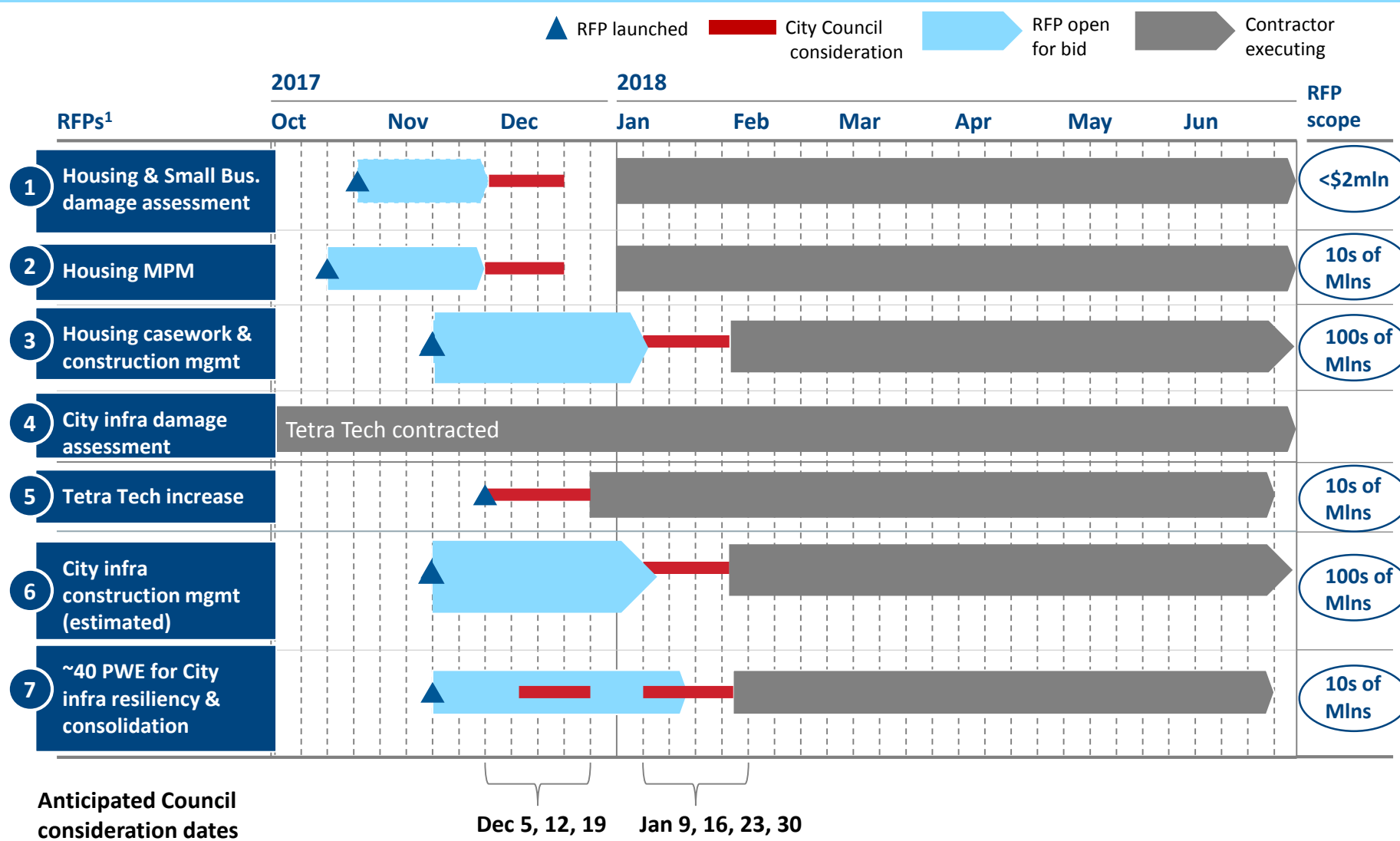


Timing

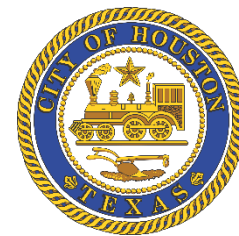
- Matching funding inflows and outflows will be a challenge
- Multiple funding requests are coming to you



Recovery 'funding' requests to City Council will begin early December



¹ Not exclusive and subject to additional RFPs arising



What does success look like a year from now? A work in progress...

