INFRASTRUCTURE IMPACTS

Turkey Creek Wastewater Treatment Plant

West District Treatment Plant
“We can’t stop Mother Nature, but we certainly can take definitive steps to mitigate against the risk of flooding.” Mayor Sylvester Turner
## IMPACTS

<table>
<thead>
<tr>
<th>Location</th>
<th>Harvey Impacted</th>
<th>Total Structures</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-year</td>
<td>30,501</td>
<td>101,428</td>
</tr>
<tr>
<td>500-year</td>
<td>28,459</td>
<td>86,070</td>
</tr>
<tr>
<td>Outside floodplains</td>
<td>90,616</td>
<td>469,634</td>
</tr>
<tr>
<td>City Wide</td>
<td>149,576</td>
<td>657,132</td>
</tr>
</tbody>
</table>
## NFIP CLAIMS

<table>
<thead>
<tr>
<th>Location</th>
<th>Number of Claims</th>
<th>Total Claims Payment Amount</th>
<th>% Claims by Location</th>
<th>Policies in Force</th>
<th>% Policies with Claims</th>
<th>Number Impacted</th>
<th>% Impacted by Location</th>
<th>% Impacted with Claims</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-year Floodplain</td>
<td>13,905</td>
<td>$1,310,964,176</td>
<td>54%</td>
<td>39,121</td>
<td>36%</td>
<td>30,501</td>
<td>20%</td>
<td>46%</td>
</tr>
<tr>
<td>500-year Floodplain</td>
<td>4,964</td>
<td>$695,845,060</td>
<td>19%</td>
<td>-</td>
<td>-</td>
<td>28,459</td>
<td>19%</td>
<td>17%</td>
</tr>
<tr>
<td>100-year + 500-year Floodplain</td>
<td>18,869</td>
<td>$2,006,809,236</td>
<td>73%</td>
<td>-</td>
<td>-</td>
<td>58,960</td>
<td>39%</td>
<td>32%</td>
</tr>
<tr>
<td>Outside of Floodplain</td>
<td>6,954</td>
<td>$422,858,406</td>
<td>27%</td>
<td>-</td>
<td>-</td>
<td>90,616</td>
<td>61%</td>
<td>8%</td>
</tr>
<tr>
<td>City Wide</td>
<td>25,823</td>
<td>$2,429,667,642</td>
<td>100%</td>
<td>132,620</td>
<td>19%</td>
<td>149,576</td>
<td>100%</td>
<td>17%</td>
</tr>
</tbody>
</table>
100-year floodplain

- 30% of city by area
- 101,246 parcels
- 79% of structures in 100-year floodplain were constructed before first floodplain ordinance was adopted
- About 85% of homes in floodplain do not comply with the current floodplain requirements
Of 12,472 compliant homes studied after Harvey, 4,788 flooded.
Mosaic of flood mitigation

- Public Infrastructure
- Greenspace Preservation
- Regulations
- Home Mitigation
- Housing
- Hardening of Facilities
UPDATING RULES

- Floodplains
- Design Criteria
- Building Codes
FLOODPLAIN DATA ANALYSIS – REDUCTION OF FLOOD RISK

Harvey Flooded Homes in 100-year and 500-year floodplains studied

Count of homes that would have been prevented from flooding by elevation

<table>
<thead>
<tr>
<th>Elevation</th>
<th>100-year + 1 foot</th>
<th>500-year foot</th>
<th>500-year + 1 foot</th>
<th>500-year + 2 feet</th>
<th>500-year + 3 feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvey-flooded homes in 100-year and 500-year floodplains studied</td>
<td>31,822</td>
<td>31,822</td>
<td>31,822</td>
<td>31,822</td>
<td>31,822</td>
</tr>
<tr>
<td>Count of homes that would have been prevented from flooding by proposed elevation</td>
<td>15,167</td>
<td>17,942</td>
<td>23,015</td>
<td>26,829</td>
<td>29,505</td>
</tr>
<tr>
<td>% of Harvey-flooded homes prevented by proposed elevation</td>
<td>48%</td>
<td>56%</td>
<td>72%</td>
<td><strong>84%</strong></td>
<td>93%</td>
</tr>
</tbody>
</table>
RULES

Floodplain & Probability
Different flood events have different chances of occurring in any given year, in any given location.

- 100-Year Flood 1% Chance
- 500-Year Flood 0.2% Chance

Before 1981
Prior to floodplain regulation

Current Regulations
Protected to 1 FT. Above 100 Year

Proposed Regulations
Protected to 2 FT. Above 500 Year
ADD floodplain and probability graphic
“A massive mosaic of solutions and partnerships will make sure Houston will build forward, not just build back.”
Mayor Sylvester Turner
HOME MITIGATION

- ELEVATION GRANTS
- DEMO REBUILD
- BUYOUT

www.houstonrecovers.org/riskreduction
INFRASTRUCTURE

- Hardening
- Consolidation
- Creating Greenspace
"Together, these changes are not the entire answer to flooding in Houston," he said. "To protect ourselves, our children and our children's children from future floods, we must also widen our bayous, build a third Army Corps reservoir and take other sweeping measures that only the federal and state governments can fund."

Mayor Sylvester Turner, January 2018