

Projected Future Storm Surge

Category 1

Hurricane Inundation Area: 53.9 Acre
 Inundated Industrial Zone: 40.2 Acre
 Inundated TCEQ Facilities: 0
 Inundated TRI Facilities: 0



Inundation Percent: 2% Industrial Percent: 5%



Inundated Facility Types



Petroleum Chemical

Category 2

Hurricane Inundation Area: 152.8 Acre
 Inundated Industrial Zone: 81.5 Acre
 Inundated TCEQ Facilities: 0
 Inundated TRI Facilities: 0



Inundation Percent: 5% Industrial Percent: 10%



Inundated Facility Types



Petroleum Chemical

Category 3

Hurricane Inundation Area: 396.8 Acre
 Inundated Industrial Zone: 152.7 Acre
 Inundated TCEQ Facilities: 4
 Inundated TRI Facilities: 0



Inundation Percent: 12% Industrial Percent: 19%



Inundated Facility Types



Petroleum Chemical Air Storage Storage Toxic

Category 4

Hurricane Inundation Area: 1314.9 Acre
 Inundated Industrial Zone: 568.9 Acre
 Inundated TCEQ Facilities: 36
 Inundated TRI Facilities: 4



Inundation Percent: 41% Industrial Percent: 71%



Inundated Facility Types



Petroleum Chemical Air Storage Chemical Toxic

Category 5

Hurricane Inundation Area: 2045.4 Acre
 Inundated Industrial Zone: 863.2 Acre
 Inundated TCEQ Facilities: 57
 Inundated TRI Facilities: 4



Inundation Percent: 64% Industrial Percent: 83%

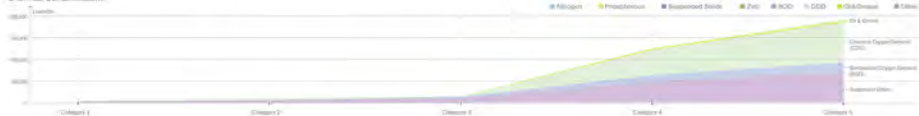


Inundated Facility Types



Petroleum Chemical Air Storage Chemical Toxic

Chemical Contaminants:



Pollutants & Public Health

Non-point Source Pollutants

- Nitrogen •
- Phosphorous •
- Lead •
- Copper •
- Zinc •
- Cadmium •
- Chromium •
- Nickel •
- Fecal Coliform •

Point Source Pollutants

- Xylene •
- Methanol •
- Toluene •
- Benzena •
- Ethylene glycol •
- n-Hexana •
- Dissocyanates •
- Ethylbenzene •
- 1 1 1-Trichloroethane •
- Ammonia •
- Cumene •
- Phosphoric acid •
- Hydrochloric acid •
- 1 2 2-Trimethylbenzene •
- Barium •
- Copper •
- Dissocyanates •
- Lead •

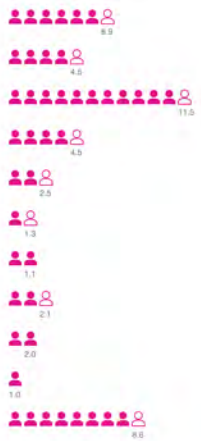


City Ranking in Harris County

- NO1
- NO2
- NO3
- NO3
- NO3
- NO3
- NO3
- NO4
- NO4
- NO4
- NO5

- Teethlost
- Physical health not good
- Obesity
- Mental health not good
- Diabetes
- Chronic obstructive pulmonary
- Stroke
- Asthma
- Coronary heart disease
- Chronic kidney disease
- High blood pressure

Estimated prevalence in 1000 people



Flood and Contaminant Risk Evaluation

Previous flood damage



Categorized storm surge



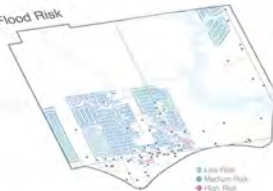
Proximity to TCEQ facilities



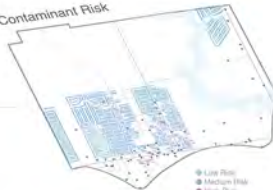
Proximity to TRI facilities



Flood Risk



Contaminant Risk



Overall Risk



High Risk Site



Green Infrastructure Stormbox



Master Plan



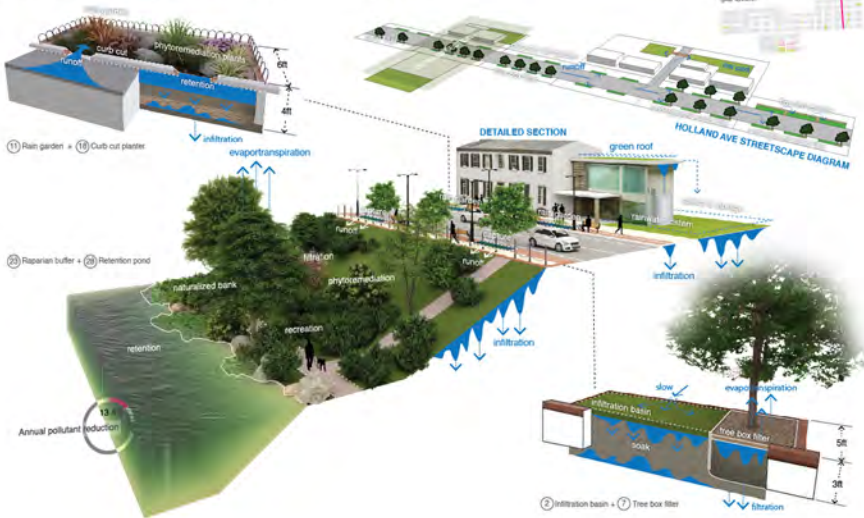
Green Infrastructure "Assemblage Units"



- 0-5' ROW Offset
- 6-14' ROW Offset
- 15-20' ROW Offset
- 21-25' ROW Offset
- >25' ROW Offset
- New Park
- Mixed-use Area



Assemblage Unit: Streetscape & Retention System



Assemblage Unit: Streetscape & Green Parking

- ① Surface sand filter • ② Infiltration basin • ③ Green parking



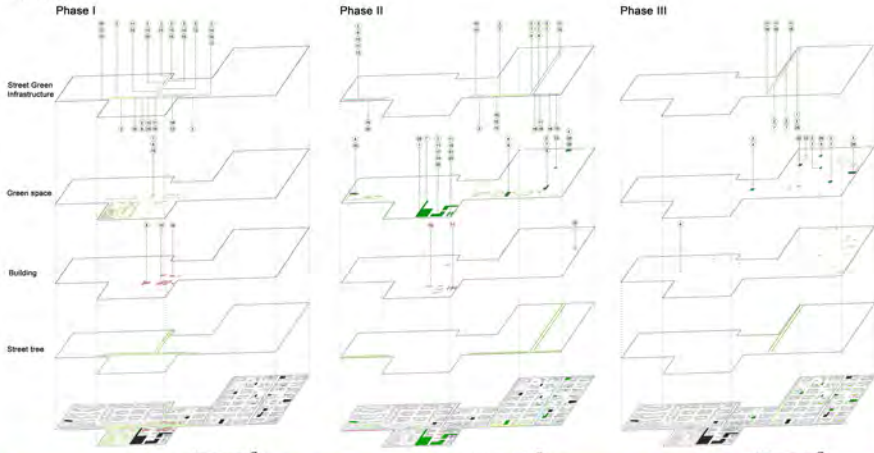
Assemblage Unit: Industrial Model District

⑪ rain garden + ⑬ planter box + ⑰ extensive green roof + ⑳ green parking

site locator



Phasing



STORMWATER MANAGEMENT BEST PRACTICES														LAND USES			PROGRAMS			

Design Impacts - L-THIA

Current Condition

Phase I

Phase II

Phase III



INDUSTRIAL POLLUTION

ACTIVE BUSINESS AREA

GREEN INDUSTRIAL AREA

HEALTHY RIPARIAN AREA

Avg. Annual Runoff Volume (acre-ft)

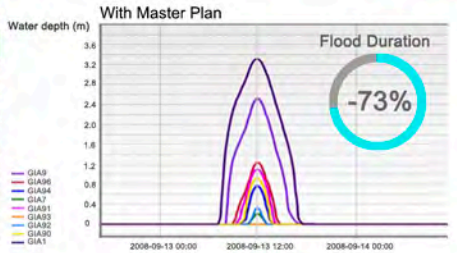
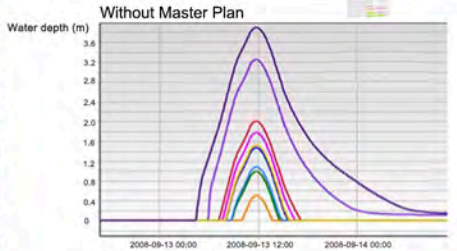


Avg. Annual Runoff Volume (acre-ft)
-14.0%

Bacterial Non-Point Source Pollutants (million of coliform)
-12.5%

Chemical Non-Point Source Pollutants (lbs)
-12.8%

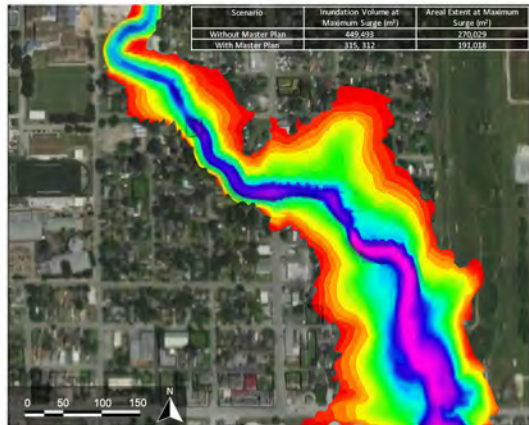
Flood Water Depth & Duration - Delft3D-FM



Flood Inundation Area & Water Depth Reduction - Delft3D-FM



Without Master Plan



With Maser Plan

