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**THE PAST AND FUTURE OF GREENS BAYOU FLOODING: WHAT CAN WE DO TO
REDUCE FLOODING?**

Greens Bayou covers portions of the cities of Houston and Humble, Texas; it encompasses 12 square miles and is cramped by the Hardy Toll Road to the east, Rankin Road to the north, Veteran's Memorial to the west road to the south. The flow of Greens Bayou ends at the Houston ship channel. As the district is developing and the population is growing, people are concerned about the flooding that is caused by the Bayou. During Hurricane Harvey many places in the district flooded. Because flooding is something we can't prevent, but we can reduce it in the future. Factors must be considered when reducing flooding in the future: building basins near the watersheds, using sandbag replacement systems, and not constructing buildings near the watershed.

To examine my research, I will use archival materials, journal articles, and newspaper articles. In the box from the special collection, I found an report on Greens Bayou called the "Update overview of Greens Bayou" by David High from the Bayou Preservation Association Records. David High is the representative of the BPA Greens Bayou Watershed. In the article, High focus on explaining where Greens Bayou is, the geography of the place, and the laws and plans that has been made to control flooding in the future. High explains that "north central portion of the Houston and Harris county parts which includes about 136,300 acres are drained

through the Greens Bayou”. As stated by High, the population in this place during the 1980 was about 158,000 and between 1970-1980 the population doubled. Which means as we pass every day the population is growing. Because this place is developing, the population projections stated that the “area will continue to develop at a steady rate slightly greater than that of Harris County with a 56% growth to the year”. Population is a big complication, when it comes to flooding because as the population grows, we have to have more place for the people to live. So, people construct new homes, apartments, grocery stores, etc. which causes the increase of flood rate. To reduce flood, the author stated that there was a congressional act passed to make a survey that was related to the Buffalo Bayou and Greens Bayou which is a major tributary of Buffalo Bayou. The results were released in 1988, it was called the “Buffalo Bayou & Tributaries, Texas Feasibility Report (Flood Damage prevention) by U.S. Army Corps of Engineers, Galveston District, Section G pertains to Greens Bayou”. It has information on how to prevent the flood. For the Greens Bayou, they are using the GR-4 plan which is to denote four water detention basins in different area to reduce the flood.

As engineers are working on different ideas to reduce flooding, it is important for us to take action and consider flooding. During the hurricane Harvey, the places near the Greens Bayou was flooded and this affected many people. It took people over a month to rebuild and go back to where they were before the flooding. If the government had done something to reduce flooding, it could have not been this bad. As we already have experienced flooding, engineers are now coming up with ideas on how to reduce it in the future. As stated by Despart in the article called “Harris County breaks ground on Greens Bayou detention basin” the main point of the engineers is to cover the plan of the detention basin in Greens Bayou. Despart is the managing editor of the Houston Press; he talks about the announcement of county engineers and Harris

County Flood District to detention the basin and if the voters should OK the bond issue. The project's aim is to reduce flooding in Greens Bayou watersheds. Despart also states that "Several people drowned in the bayou's floodwaters during Hurricane Harvey last August, and many neighborhoods along the channel were swamped by the Tax Day Flood in 2016" (1). The idea to build basins near watershed could help Greens Bayou to have less flooding in the future.

Engineers are planning to do the project "over the next six months, engineers will excavate more than 343,000 cubic yards of soil over 90 acres to complete the Lauder basin. Crews will preserve a 200-foot-wide wooded area along the bayou with a buffer of trees on the east side of the site" (Despart 1). Constructing these basins will reroute the stormwaters from homes and business to the basins so that there is a less chance of flooding.

In addition, people are working on research to help find a solution for flooding. Another factor to consider is the use of sandbag replacement system (Massolle 3). Massolle talks about using sandbag replacement system to control emergency flood in his article. As stated by Massolle, the sandbag replacement system can be "installed at a shorter time and with less effort" (1). Replacing the sandbag with a modern sandbag filling machine could speed up the time but the machines often experience downtimes. Because of that, the Massolle's solution is a "mobile flood protection system" which is divided into different locations. He further talks about the advantages and disadvantages of using the sandbag replacement system, the material and the method of the sandbag replacement system.

Furthermore, I looked into public media to investigate my research. One of the articles that I found also talked about building basins to prevent flooding. "The goal is to control flooding, which has historically been a problem for people who live near that waterway" (Ortiz 1). As stated in the article, the worst flood that happened in 2001 was the Tropical Storm Allison.

“About twenty-two people died in Houston and the storm caused more than \$5 billion in property damage, mostly in southeast Texas and southern Louisiana” (Pg.1). To prevent this in the future, they are building the basins near the area. “The Army Corps of Engineers is the main lead on that, and they’ve awarded a contract and that contract is about 25 percent complete to date. They’re expecting to get it done towards the end of this year,” explains Gary Zika, who works for the Harris County Flood Control District.

Finally, according to Nilsson, “humans have affected the risks of extreme floods and discuss whether ecological restoration can serve as a sustainable means to alleviate such floods” (1). The human impact on landscape has increase the frequency of floods. People have tried to decrease flood by “building defense strictures and regulating flows by dams” (Nilsson 1) but has caused technical issues which made the increase of flood rather than decreasing. As stated by Nilsson in the article, Climate change is one of the main reasons for flooding. Nilsson focuses on the “hydrologists foresee rapid changes in the water cycle in the regions of Denmark, Finland, Iceland, Norway, and Sweden and found rapid changes in the water cycle due to climate change” (2) to better understand the cause of flooding. The region also has “long history of stream and river restoration” (2) which could help them synthesis their idea to reduce flooding in the future. With this information it will provide them with solutions of flood mitigation. This article clearly states that the human’s impact on landscapes and climate change causes flooding to occur.

It is important to considered these factors when reducing flooding in the future: building basins near the watersheds to reroute the stormwaters from homes and business to the basins so that there is a less chance of flooding, using sandbag replacement systems, and not constructing buildings near the watershed could help us reduce flooding in the future.

Works Cited

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