Flooding in Harlingen
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Part I: And the Rains Came

Harlingen like other Valley cities has seen its share of floods. For this city the origin of these is from heavy precipitation generated from a number of sources. This rain can be generated by frontal passages, local thundershowers, low pressure systems originating in Mexico, hurricanes, and tropical storms. Being somewhat removed from the Rio Grande, the river does not threaten the city directly and will not if the river levee is not breached. Unfortunately, the Valley's other natural waterway, the Arroyo Colorado, parallels the city's southwestern boundary for about two miles, traverses directly through built-up city areas for about another six, then continues about two more miles to Port Harlingen where it is transformed into the more open channel of the intra-coastal canal system. The Arroyo has spelled trouble for the city from its very birth.

While Harlingen appears flat to the eye and especially so to an outsider from hilly country, it is not. It possesses subtle undulations resulting in surface water flows to the northeast and accumulations of runoff waters in certain low-lying neighborhoods and where blocked by railroad right-of-way elevations. If it were not for the city surface drain infrastructure, problems would be even more exacerbated than they can be at times. Major open drains installed decades ago to remove excess water from then more prevalent agriculture land are still in place and an important asset at times.

When Lon C. Hill laid out the Harlingen townsite in 1904 he had experienced the quagmire that dirt Valley roads could become after heavy localized showers. Still the area received only an average of 25" rain annually and could thus be categorized as semi-arid. Exposure to real life events would soon bring him and residents the knowledge that rain events in the region could be extremely capricious. Statistical averages would have little meaning.

Railroad engineer Sam Robertson provided us a very early account of Harlingen's challenges. He wrote: "On the 16th of September, 1904 while laying track near Havana, just east of Sam Fordyce, "Old Man River" rose twelve feet in two hours, and I knew we were in for it. I got a handcart and six big "niggers" and started for Harlingen Junction where we had just finished a bridge across the Arroyo Colorado. I had driven piles for sub-foundations and knew pilings furnished by the Railroad Company were forty feet too short to stand a major flood because they did not penetrate the quicksand. I had built false work to erect the steel superstructure and knew the drift would accumulate above the false work and carry the bridge out and cause my friends, the Johnston Brothers, a big loss. So, I rushed with my hand cart and niggers and picked up some more men in Harlingen and sawed the false work down and let it drop into the Arroyo Colorado. The flood started down the Arroyo within the hour after I had destroyed the false work obstruction. But the channel span was too narrow and the steel span and concrete abutments were swept out quickly. We lost eighteen miles of track and roadbed between Harlingen and Havana and about twelve miles between Harlingen and Raymondville."
This flood showed us that we would need flood protection as well as irrigation. So, in preparing my data to aid in promotion, I traced out high water marks all over the entire delta and during the flood we had engineers take approximate heights of the Rio Grande at Sam Fordyce through the Arroyo Colorado, through the Rio Tigres on the Mexican side and a gauging station at Las Rucias near the San Benito pump."

The original wooden bridge gave way in part on September 21, 1904 as continued high arroyo flows worked to undermine it. This then disrupted service to Brownsville for 28 days until repairs could be made.

Harlingen's streets and roads were a major issue from the time of the city's naming and first post office establishment in 1904. Samuel McPheeters Glasco was a recent seminary graduate when he arrived here to take up church work. He described Harlingen in 1909 as a mud town, no paved streets, or roads, or sidewalks—coal oil lamps, not a plumber in the entire Valley—burros, or horses, or mules were the chief means of transportation, and he estimated the population to be about 200.

E. W. Anglin, Lon C. Hill's right hand man, left this description "In 1909 we had an awful flood. All downtown was flooded except for the high spot where the Hills lived (currently the location of the Casa del Amistad). People went in rowboats up and down main street and to their friend's homes."

At times when the river was forecast to rise, people such as farmer Morris Chaudoin, would head south of town with men, mules, tools and fresnos to throw up dikes in order to prevent rising waters from inundating cultivated fields. It was exhausting work and kept them busy for days. His sister would later say "I always hated to hear of a rise coming down the river."

By April 1911 the City fathers were already recognizing the inherent drainage problems in the town. They voted to expend $2,200 to create drainage into the arroyo. For the period this was a substantial outlay.

If there was one constant that remained in the minds of early Harlingen pioneers and their children, it was mud. Years later Minnie Hill, who had come to the Valley in 1919, would comment "And the Mud! When it rained the soil turned to gumbo 'half way to China' as the saying went. Rubbers were useless; the mud just oozed over and into them. People either wore rubber boots or pulled off shoes and stockings and waded barefoot through the mud. If, during a rainy spell, one had to go to town for groceries or other reasons, they went on a farm wagon pulled by a mule team, and the wheels of the wagon sunk into the mud up to the axles. After that pull, the mules well deserved their extra portion of feed that evening." Even with the introduction of motive power, road conditions weren't much improved. Minnie went on to relate "I remember driving to Brownsville one day and between Barreda and Olmito, a car passed me and threw mud entirely covering my windshield so that I couldn't even see daylight through it. I had to lean out the car door to see to pull over to the side of the road and stop to clean it off enough to proceed to a place where I could get it washed off."

One of the vivid memories several oldtimers recalled was the strange shelter that they used during the 1909 storm. Near the Hill house a substantial haystack had been piled. It was about 100' long, 12 to 13 feet wide and 13 feet high. Spaced down its length ropes had been thrown over it and secured by big logs. Using cane knives men carved out a sizeable cave within the haystack. For 24 hours this offered a secure shelter to the Hill, Anglin, and Harwood families.
Lawson Anglin in 1985 noted of the event that no surface soil within Harlingen could be discerned with the exception of the top of the railroad embankment. He stated: “I was seven years old in 1909, and I learned to swim in that nasty old flood water, right down Fair Park Blvd.—that would be hard to do today.” In an oral history recorded 70 years later one oldtimer stated that one could row a small boat from Harlingen to Lyford in the overflowing ditch alongside the railroad embankment.

Belle Watson, a 1922 arrival, lived as a child in a newly built home on North Commerce across from the cotton compress (now corner of Commerce and Fair Park Blvd.). Her father would take them by wagon or horse to the railroad track. In 1976 she recounted “The mud was one of the greatest handicaps in the world. My younger sister and I would walk across in the mud, wash our feet in the drainage ditch, put on our shoes and walk down the track to Jackson Street.” The city had constructed wooden sidewalks along Jackson from Commerce to 2nd Street and when the Central Ward School was opened in 1912 extended them all the way to 6th Street.

With the standing water came hoards of mosquitoes. Most homes did not have screening. Families often brought in a washtub, filled it partially with soil, then built a smoky fire of green brush to ward off the insects. A lucky family was one with mosquito netting or able to afford the insect repellant oil of citronella that came from trees in Ceylon and Java.

In May 1922 the Northern Mexico began to receive heavy rains. As these continued the Valley braced for flooding and by June 25 the waters of the Rio Grande reached their zenith. The Arroyo Colorado was to overflow in Harlingen. The canals also backed up. Emmett Anglin recalled moving some people out of second story windows.

In the Harlingen area, flood fighters had also been galvanized into action. Alfred Tamm, the engineer in charge of the Harlingen Water District; H.A. Beckwith, water engineer; and C.P. Bobo, manager of the district were leaders of efforts to shore up the levees south of the city. Their efforts succeeded in keeping farmland from being flooded as well as the pumping station. The cost was $3,100 of which the city picked up $506. The city gave them a vote of thanks on 7/2.

The excessive flows in the Rio Grande and overflows into the Arroyo Colorado and along the line endangered train service such that it was suspended. It was only on 7/2, after an 11 days suspension that the first train arrived in Brownsville.

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Part II: Hurricane Season and More

It is 9/5/33, Labor Day, that Hurricane No. 11, 1933 comes ashore north of Brownsville. It subsequently drops or damages 90% of the citrus crop in the Valley. A less severe hurricane here a month earlier had negatively impacted the cotton crop which was enjoying a 9 cent a pound return versus 5 cents for last season. While 55,000 bales were eventually harvested, growers estimated that they had lost 20,000 bales due to rainy weather late in the growing season.

Much has been documented about this hurricane whose center swept through San Benito and Harlingen causing major damage. The high school, a little over a decade old is
dismantled as is the Municipal Auditorium. Flooding, primarily west of the railroad tracks, once again occurred.

It is 9/10/36 that a tropical storm forms in the Bay of Campeche, makes landfall at Brownsville on 9/13, then moves up the Valley all the way to Del Rio. Coupled with an exceptionally wet August, the cotton harvest is negatively impacted. By this year the city has installed 47 miles of storm drains.

September with its history of hurricanes is the area's wettest month. Harlingen averages 5.21" for this month. While its annual average is a modest 25.75" it has experienced some exceptional wet years. Examples are 42.74" in 1923, 41.75" in 1933 with September alone accumulating 18.25", 45.99" in 1941, 41.56" in 1958, 42.50 in 1973, and 44.64" in 1976. Two exceptionally wet months were September 1984 with total precipitation of 17.70" and April of 1991 with 17.15". With a permeability of well under an inch per hour it doesn't take much of a high intensity shower to pond Harlingen Series soil.

The Valley is famous for having isolated downpours in a limited area. It's a case of singer Johnny Ray's "little white cloud that sat right down and cried." The most famous instance of this was the once in 500 year event that occurred over Harlingen, Palm Valley, Combes, Primera, La Feria and San Benito on the morning of April 5, 1991. Up to 20"+ were to fall in six hours in some areas (officially 17" in 24 hour period at the airport). Insurance losses for houses and over 3,000 cars range into the millions. Mayor Card initially puts losses at $5 million then revises it to $12.5 million plus an additional $3-5 million of which is for public facilities. The airport, which sustained $1.6 million of damage, was closed to air traffic. Four days after the storm subsided 1,200 to 1,500 homes were still under water. After visiting here, on 4/8/91 Governor Ann Richards declared Cameron County a disaster area.

Flood insurance maps proved to be inadequate in delineating potential flood plains. The east side of Palm Valley, an area that had never previously sustained any flooding, did so in this event. As a consequence families in this and other areas had not taken out flood insurance. Carpet, flooring and dry wall firms did a land office business. It is likely that water-damaged vehicles found homes in Mexico.

It is hurricanes however that have done Harlingen "dirty" over the decades. Despite being removed from the coast the city has been impacted by hurricanes still packing a punch after making landfall. The following years have seen hurricane or tropical storm activity here since the city was settled: 1909 (twice), 1910, 1912, 1913, 1925, 1933 (twice), 1936, 1947, 1967,1980, and 2008.

The two major hurricanes that left an indelible mark on Harlingen residents were the Labor Day Hurricane of 1933 and Hurricane Buelah in 1967. Much has been documented about these two horrific events, so they won't be covered in detail suffice to point out a few salient points.

9/21-22/67 Hurricane Buelah, third largest of the Twentieth Century, hits the lower coast of Texas. It has moved up from Cozumel, Mexico. Winds up to 140mph are registered near Brownsville. Up to 30" rain flood and inundate the lower Valley. The Arroyo Colorado's rampaging waters cover many of the city's neighborhoods as the river is at its highest level in 24 years. The city sees 26 lift pumps become inoperable. This brings the evacuation of 4,000 residents. Pres. Lyndon B. Johnson declares 24 counties of Texas as disaster areas. Estimated dead are 18, injured-sick 9,000, homes destroyed/heavily damaged 3,000, property damage $100 million, crop damage $50 million, 300,000 people
evacuated during the storm and subsequent flooding. On 9/28/67 the President makes an aerial inspection of Beulah-flooded South Texas. Following this catastrophe federal engineers redesigned the division system immediately north of Progreso. It is at this site that floodway waters from south of Mission and Arroyo Colorado waters meet. During Buelah too much water was diverted to the arroyo. Supposedly this circumstance cannot now repeat itself.

With little major activity since 1980, many had largely forgotten what a real hurricane could extract from the community. Hurricane Dolly, a Category 2 blow, brought with it also rain accumulations of 10 to 14". Fallen trees and other debris blocked drainage, and once again the city would experience flooding though nothing to match some previous events. While Harlingen's greenery adds greatly to its attractiveness, vegetative cuttings piled in the streets for pickup can at times play havoc with drainage.

Isolated downpours of 3" per hour intensity are commonplace here. When they last 45 to 60 minutes localized street flooding is sure to occur. Once soils are saturated runoff will occur. High clearance vehicles show their utility on such occasions, but they and their speeding drivers also propel waves of water into commercial businesses, especially those west of the railroad tracks. May 2007 saw a 9.12" event; 22-25" were totaled in July 2008 and that included Hurricane Dolly's precipitation; and September 2008 was very wet with 22" being recorded for the month. Storm drains in residential and commercial areas are designed to handle a once in five year event.

On 9/5/06 the city sets forth a proposal for a $500,000 comprehensive drainage study. Due to lack of funds however this doesn't go forward until certificates of obligation are sold the following year.

The Cameron County Drainage District #5 and Harlingen Irrigation District #1 have worked over the years to minimize flooding problems, but as the drainage plan document states "The topographical, climate, and soils of the Harlingen areas are favorable for agriculture, irrigation, and urban development, but they combine to make adequate drainage challenging." The city moved forward in 2008 in implementing drainage improvements in four parts of the city and is continuing to do so in others. For a detailed exposition on city drainage the reader is invited to pull up http://www.myharlingen.us/docs/15-pz.master.ch8.doc We are progressing, but success will be slow and costly.