

Council District 9

Official Report on Flooding and Drainage in this District

Submitted 12 August 2016

Disclaimer: This report contains the Findings and Recommendations of the Committee appointed by Councilman Joseph Krier (D-9) to investigate complaints in the Council District relating to flooding and poor drainage. It is the Committee's true and correct Report, based upon its site surveys, and does not necessarily reflect the views of the City's Transportation and Capital Improvement Department (TCI), the Councilman, the District 9 Staff, or any private interest.

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EXECUTIVE SUMMARY

Councilman Joe Krier appointed a District 9 Drainage and Flooding committee to examine complaints concerning flooding or poor drainage in the Council District. The committee consisted of Joel Garcia, Luis Alday, and Larry Lamborn, Chair. The committee began its work in mid-February and concluded by producing this summary of its findings in early August 2016. Although cooperating with Mr. Arthur Reinhardt of the City's Transportation and Capital Improvements Department (TCI,) the committee did its work independently and its Findings are its own.

In alphabetical order, the main sites studied are: Blossom Park (Budding) Neighborhood; Burr Oak (off Dreamland); the Castle Hills – Meritage Construction Company problem; the Castle Hills – Carolwood Street area; the Panda Bear Day Care Center; Panther Creek, and Shady Oaks Neighborhood. Some sites required more than one visit. The Castle Hills section is divided into two parts. The first (3A) is far more serious, having legal and financial ramifications, and deals with the flooding problem caused by the Meritage Company's method of placing 80 homes on high ground, clear cutting the natural vegetation, use of impervious materials, and constructing a stormwater sluice or by-pass which is at best mean-spirited and may be illegal. The second (3B) involves periodic flooding in and on Carolwood Drive which we believe has a fairly simple resolution.

Resolution of the two Castle Hills problems will require a cooperative effort by all parties involved. On the Castle Hills side, thought should be given to redesigning Manton Street – possibly slightly widening the street and building a larger, more effective culvert or viaduct so that whatever rainwater is not stopped on the San Antonio side can be more effectively channeled on the Castle Hills side. On the San Antonio side, measures must be taken to correct an egregious design flaw that causes water to bypass Meritage's "catch basin" and spill onto homeowners at lower levels. Meritage must agree to control stormwater more effectively as specified in our report.

Not least, both San Antonio and Castle Hills must review their existing Codes governing new construction of streets and housing, and make clear provision for the intelligent handling of rainwater. There is no excuse whatsoever for clear-cutting of new construction sites and callous disregard of natural drainage patterns as done by Meritage. The "SA Tomorrow" group can make cogent recommendations for street design, use of materials that reduce stormwater, better water handling methods, and specific types of water-absorbing plants.

City Code pertaining to streets and new homes should incorporate the advanced methods developed by the "SA Tomorrow" team. If this is not done, then all of "SA Tomorrow's" preaching to Neighborhood presidents is pure hypocrisy and a waste of time of Neighborhood representatives. At bare minimum Code MUST be redrafted and practices such as clear-cutting, bull-dozing, and the intentional by-passing of "catch basins" made illegal. *In particular, parking lots must henceforth be made using permeable materials and better techniques, incorporating ideas from "SA Tomorrow."*

Code inspectors in both cities must crack down on builders who disregard or violate applicable Codes. Fines should be heavy and building permits yanked for those who violate Code. Moreover, persons guilty of illegal dumping must be arrested and severely punished, to include jail time.

The D-9 Drainage Team believes that perhaps its most valuable contribution to this effort does not lie in particular recommendations on this or that specific drainage problem, but on the greater concern that City Codes – which barely addressed the problem of flooding only twenty years ago – must be brought

up to date to incorporate contemporary methods and technologies that mitigate run-off. Had these techniques been part of the Code in past years, we would not have many of the flooding problems that now plague us. Nor would the citizens of San Antonio be required to spend millions of tax dollars correcting egregious mistakes (and some intentional evasions) in handling of stormwater made by developers in past years. We will be suggesting amendments to the Code and we look to Councilman Joe Krier to spearhead these reforms with the goal of reducing local flooding in years to come.

While reading the Findings in this report, the reader is asked to keep in mind the guidance provided by Mr. Roy J. Akiona, P.E., CFM, a recognized authority on the subject of stormwater drainage.

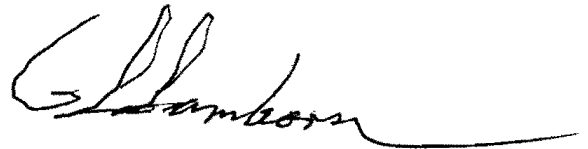
Respectfully submitted:



Joel Garcia



Luis Alday

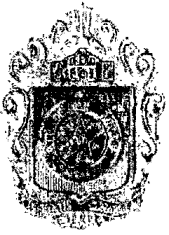


Larry Lamborn

Committee Members

12 August 2016

Having completed our work this date, and submitted this report to those concerned, we hereby resign.



CITY OF SAN ANTONIO

JOSEPH R. KRIER
OFFICE OF CITY COUNCILMAN
DISTRICT 9

December 21, 2015

Mr. Larry Lamborn
20410 Border Lane
San Antonio, Texas – 78232

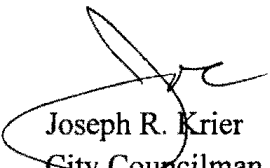
Dear Larry:

As you know, the 2017 Bond package is around the corner. I have been asked by City staff to share my priority projects. Before I do so, please join me on January 19, 2016 from 10:00 a.m. to 11:00 a.m. at the District 9 Field Office, so that I have your input on bond projects in District 9. The Field Office is located in suite 290 of the Frost Bank building at 16500 San Pedro Avenue, 78232.

I would be grateful for your commitment to work on the bond committee on drainage and flood control because you have direct experience with these issues.

Attached is a letter I have previously sent to Transportation and Capital Improvements Director, Mike Frisbee. Please review it in an effort to become more acquainted with the bond projects my staff has recommended so far.

Sincerely,


Joseph R. Krier
City Councilman
District 9

Enclosure: 2017 Bond Program

BACKGROUND INFORMATION ON DRAINAGE POLICY

Mr. Roy J. Akiona provided the following background information on the evolution of City Codes regarding control of flooding and drainage problems.

A drainage committee was set up to look at development and the impacts to downstream properties.

If there [were] downstream impacts from a development then detention was part of the drainage system improvements.

This set up the detention requirements.

There were some developments that would not impact the downstream drainage systems, as these downstream systems were already built to carry the ultimate development storms. So developers did not want to build detention basins on their properties.

So the idea of development paying into a fund to support future improvements, such as channel upgrades, detention ponds, etc. was developed.

This idea came from Austin. They had a Fee-in Lieu of On-Site Detention program for drainage.

Hope this information helps.

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1. BLOSSOM PARK (BUDDING) NEIGHBORHOOD

OVERVIEW OF AREA

The Blossom Park Neighborhood (BPNA) is wedged in between a commercial area dominated by Time Warner and the "Airport Business Center" (located on Jones-Maltsberger) and the southwest corner of McAllister Park. Unfortunately, the commercial entities and their conventionally asphalted parking lots occupy the "high ground" perhaps thirty feet higher than the homes below. BPNA itself is on low, generally flat ground, and may have been part of an old farm before being developed as a neighborhood in the 1970s. The initial portion of the neighborhood was built in 1972 by the Garrett Brothers; the latest portion was finished in the last 15 years. There are approximately 450 homes in BPNA.

It is worth noting that the Business Center had been built shortly before 2003 – therefore possibly before the 1997 Code was adopted. [See Notes] The Time Warner facility, however, was completed after 2003. BPNA's drainage problems commenced after that date.

The central drainage feature in BPNA is (from an aerial view) a sickle-shaped ditch/swale. The "handle" of the sickle is a very straight, but very steep ditch paralleling the Time Warner fence. This ditch descends very sharply from Jones-Maltsberger to the vicinity of Lotus Blossom and Orchid Blossom streets, where it makes an abrupt 90-degree left turn and then levels off, becoming the curved "blade" of the sickle where it makes a leisurely broad turn to its right through flat, somewhat swampy ground. The drainage swale flows through the middle of BPNA, passes under a viaduct on Budding Boulevard, and enters McAllister Park where the water (now a natural creek) eventually joins Salado Creek.

DISCUSSION OF THE DRAINAGE/FLOODING PROBLEM

The commercial area occupied by Time Warner and the Business Center is perhaps thirty feet higher than Blossom Park. The companies have two large conventionally-asphalted parking lots with grassy catch basins, per Code. Unfortunately, due to a design flaw, and the fact that companies sit on "high ground," stormwater empties from both parking lots into the steeply-angled swale instead of the catch basins. It then rushes downhill with great force. The rushing water carries rocks, sand, and silt which are deposited at the foot of the hill. Unfortunately, when there has been considerable rain, the rushing water jumps over the low berm where the "handle" of the swale must abruptly turn the stormwater fully 90 degrees. Consequently, the storm water has flooded BPNA homes on the lower ground in this area. BPNA president Marilyn Jowdy can document one flooded home and has information suggesting that others on Rose Blossom and Lotus Blossom were similarly damaged in this manner.

When looking upward toward Jones-Maltsberger -- it is immediately apparent that ALL the rainwater from the parking lots and equipment parking areas belonging to TWC (not to mention the buildings themselves) funnel downward into BPNA. From the top of the hill to this point there is only a "V"-shaped ditch with only fast-eroding terraces to slow or stop the down-rushing water.

The two "catch basins" on the TWC side of the fence are earth-filled basins though with concreted walls and small weep-holes to permit water to flow into the ditch. However, the lower of the two basins is simply too low to catch and discharge much of anything into the swale. The other, higher basin appears not to receive much, if any, water from the higher parking lot. Rainwater is instead emptied off the TWC property into the "V"-shaped ditch, thus defeating the purpose of the basin.

The group made an extensive tour of the Time Warner Company's easement along the edge of the Neighborhood. The center of the flooding problem was identified as a short stretch of the ditch where stormwater originating in the upper parking areas belonging to TWC descends rapidly and then, as mentioned, is forced to make an abrupt 90-degree turn to enter the swale which passes through BPNA. Erosion control will be needed in this sector. The main reason is that if improvements are only made in the vicinity of the viaduct, the system will work only until it gets filled again with sediment. Sediments come from the steep slope with high velocities. The moment the water changes direction (where it turns 90 degrees) the water's velocity drops, causing the sediments to settle and fill the area. Also, all the concrete structures that were built for reducing the velocity of the water will begin to fail, thereby making conditions worse at the site.

Adding to these difficulties – in fact due to the surfeit of stormwater – a small, poorly designed viaduct over Lotus Blossom Street has cracked and is in danger of collapse. A large triangular piece of concrete has separated from this viaduct. It is only a matter of time before this piece separates completely. When it does, the viaduct will collapse.

There is a collapsed drain pipe leading from an alley into the swale. Because the pipe has been crushed, water from the alley no longer can be drained away. It therefore collects in the area and then drains into residents' homes. This crushed pipe must be replaced, though it was noted that extreme care must be taken inasmuch as both gas and electrical lines are not far away from the clogged drainpipe. A second problem is that service vehicles continue to use this as a "cut-through" area – they need access for grounds-keeping purposes, but something needs to be done to prevent the weight of the vehicles from crushing the pipe yet again.

From the viaduct over Budding, the swale passes out of the neighborhood and enters McAllister Park. About 150 yards or so into the park – a portion which formerly was under control of SARA – the swale ends and empties into a natural creek. The creek is perhaps eight feet wide and, like most creeks, winds this way and that until (at some point not observed) it joins Salado Creek. The problem with this area is that the homes are perhaps only three feet above the water level. Any obstruction in the flow or any abnormal flow (eg. a very heavy rainfall) likely would result in flooding. On the north bank, there is a fence in danger of collapsing into the swale. Only two or three small trees support this fence, but it is clear that rainwater run-off is gradually undercutting the fence. About four to six inches of water was in the swale when we toured it.

COMMITTEE'S RECOMMENDATIONS

That TCI and/or City Council politely request Time Warner to revisit its drainage and water-handling capabilities to ensure that most water is captured by either of its two "catch basins" (which presently are not doing what they were designed to do.) Properly aligned, these basins could capture more storm water and allow it to percolate into the ground or be more slowly released into the drainage swale leading through the middle of Blossom Park Neighborhood.

That TCI use Bond Issue money to replace a crumbling viaduct over the swale on Lotus Blossom Street. The new viaduct should have an opening so that water flowing down Lotus Blossom may exit left into the drainage swale instead of continuing on down the street as is presently the case.

There are two places in the section of grassy swale where some erosion has taken place. We recommend that these areas should have rip-rap to prevent further erosion. Otherwise, we believe this grassy swale to be absolutely ideal as a water-absorption area and an asset to our water table.

Attention must be given to the “stair step” construction of the drainage swale higher up in the Time Warner easement as it is beginning to fail. We recommend that the City and/or Time Warner build new “stair steps” to slow the velocity of the water and reduce the pace of erosion.

NOTES

The committee believes that TCI is indeed planning to replace the viaduct on Lotus Blossom, and we heartily concur if this is, in fact, TCI’s intention.

TCI has done some erosion control work and minor channel grading in the swale near the viaduct at Budding Boulevard. Here again, our applause.

Because of the very steep slope leading downhill from the Time Warner properties to Blossom Park, at some point in the past “stair steps” were developed in an attempt to slow the stormwater and prevent erosion. Unfortunately, those “stair steps” are beginning to fail, thus bringing sand, silt, rocks, and other materials into the Blossom Park Neighborhood.

Between our preliminary visit on 11 March 2016 and a subsequent visit in mid-April, we observed even more gravel and concrete pieces that had collected where the water makes its turn. TCI’s Mr. Newberry informed us that his crews had cleared the area of gravel and debris in February. He was preparing to do this again in April. (Adding to this problem is some illegal dumping which had taken place – a very large piece of concrete now topped a pile of bricks.)

The BPNA in its present form was established in 1996, although the Garrett Brothers earlier recorded the association with the IRS, probably in the 1970s.

BPNA president Marilyn Jowdy notes that BPNA’s Minutes of January 2003 show that the Neighborhood Association was working with the property developer of the Airport Business Center, 12508 Jones-Maltsberger, in an attempt to mitigate drainage issues (at Blossom Hollow cul-de-sac) being caused by its construction. The large catch basin was built as part of this construction.

This negotiation took place before the Time Warner parking lots were built. At that time, the only Time Warner facility was a smaller building on Jones-Maltsberger between Starcrest and Bluecrest. The larger Time Warner building and its various parking lots and the small catch basin were built after 2003.

2. BURR OAK (aka DREAMLAND) VICINITY

OVERVIEW OF AREA

Burr Oak is the name of a street in the so-called "Robards Neighborhood" or "Dreamland" that is located south of Lockhill-Selma Road where it crosses Military. It is just above the McGimsey Boy Scout Camp and immediately south of a strip mall featuring Gold's Gym. This area is in the extreme southern portion of District 9 not far from the Castle Hills city line. The "Robards" area was built probably in the 1950s and is today in decline.

A key consideration for planning is the fact that there is no Neighborhood Association or other civic organization in existence (it dissolved itself in 2003.) Our host informed us that none of the residents in "Robards Neighborhood" are inclined to take responsibility for Neighborhood appearance or show even the slightest interest in correcting the obvious drainage and flooding problems. Many show no interest even in controlling the weeds that now choke the alley and that also thrive on private property. He believes that the residents expect the City to cut the weeds for them and repair the alleyway, and that they do not have to do anything themselves.

DISCUSSION OF DRAINAGE/FLOODING PROBLEM

The drainage problem in the "Robards Neighborhood" is centered in a disused alleyway between Burr Oak and Auldine streets. The problem originated in the late 1960s when a now-closed HEB store was built on elevated land between Lockhill-Selma and Military Road. *A large, sloping area perhaps seven to fifteen feet above the Neighborhood's level was paved over with asphalt for a parking lot between the higher Military Road side and the somewhat lower area on Lockhill-Selma.* It follows that a LOT of water cascades down the parking lot during heavy rains, crosses Lockhill-Selma, then flows directly into the alleyway. There is also a large concrete "catch" area built into the sidewalk on the south side of Lockhill-Selma at this spot -- which merely funnels water from the parking lot via Lockhill-Selma, directly into the alley. It is likely that prior to development part of the alley had been a natural creek.

As the stormwater heads to lower ground (Boy Scout Reservation) and ultimately to Olmos Creek, the water passes down the Burr Oaks alley which today is so pitted and eroded that it is permanently closed to vehicular traffic. Our host told us that even the power crews who must occasionally access poles situated in the alley now do so through private residences on Burr Oak rather than the alleyway itself.

The group observed a number of truly huge potholes (one measured three feet by five feet and was filled with water) that would make vehicular travel difficult if not downright hazardous even for large frame trucks. The alley had been paved many years ago, and had been "cold patched" on several occasions, but the water has undercut and moved even slabs of "cold patch" out of place. It is clear that the alley, now overgrown with weeds in places, is useless for vehicular access. Indeed, the alley is chained off at both ends to discourage vehicles from even attempting to use it.

Adding to the stormwater run-off from the parking lot is some fresh water originating from Gold's Gym. A team member reports that during the time of the HEB (ca 1968 to 2009) water was seen to emerge from beneath a row of evergreens. When the HEB closed, the water flow ceased. But when the building was converted to Gold's Gym and reopened in 2015 the flow began again.

After each rain -- even fairly minor showers -- pebbles, broken concrete pieces, and chunks of "cold patch" are washed down the alleyway and deposited in heaps where Burr Oak intersects Barfield Lane.

Our host showed us a photo of a heap of rocks and broken pavement pieces that had been deposited sometime in mid-March.

COMMITTEE'S RECOMMENDATIONS

The committee suggests three main actions. First, a barrier on Lockhill-Selma might be built that shunts water further down that street to a point where it might turn right and continue down Burr Oak. Our host did say that during storms, rain flows are minimal down Burr Oak. While a barrier would do nothing to stop the flow from the higher level parking lot, this approach at least prevents water from entering the alley, and spreads the water out a bit, thereby reducing its eroding power somewhat.

The alley itself is basically useless. The City might consider re-grading it, but instead of paving or cold-patching it as in the past, *it should be remediated with particulate and organic matter to a depth of twenty inches and simply left to grow grass.* Grass and remediated soil will help absorb water instead of merely directing it further downhill. Indeed, our host told us that the alleyway had been in grass prior to the arrival of the HEB. Grass is a worthy absorbent for water and it certainly slows the rate at which it flows. There likely will always be some stormwater that finds its way into the alley. But with low berms on the eastern side of the alley, and the alley itself now "naturalized" with grass in place of concrete, water should no longer be a flooding threat to the homes fronting on Burr Oak.

The root cause of the problem, however, remains the parking lot. The Lockhill Village parking lot, as it now exists, merely dumps hundreds of board feet of water on "Robards." A part of the solution, therefore, lies in converting at least some parking spaces into "traps" for water as part of a "Smart Drainage" program. These parking spaces could have impervious pavement removed, the soil remediated along the lines suggested by SARA, and water-loving plants planted. While this measure would not completely eliminate the run-off problem, it would greatly reduce the amount of water flooding across Lockhill and thus entering the Burr Oaks area. The loss of six or eight parking spaces would hardly affect Gold's Gym.

Finally, the City should approach the Gold's Gym management to discuss the problem of water seepage from the evergreens planted on the edge of its parking lot.

NOTES

Burr Oak Alley has been the site of several previous TCI improvements to mitigate flooding of the corner house. NONE of these efforts have proved successful because the root cause of the problem (namely, the water run-off from the large asphalt parking lot) was never addressed.

The committee disagrees with TCI's proposed \$3.5 million "reconstruction" of the alleyway and a portion of the roadway as it believes this would be pouring good money after bad. What is needed is to solve the problem "upstream" at the parking lot rather than constantly wasting money in patchwork repairs "downstream."

There is a sewer hook-up, and gas and electric conduits are located near pole number 11114 on the alleyway. Converting the alley to grass would probably make it accessible to service vehicles.

3A. CASTLE HILLS – MERITAGE CONSTRUCTION AREA

OVERVIEW OF AREA

One of the two areas considered "Castle Hills" is the drainage area involving the Meritage Company's development of 80 new homes off Silver Oaks and Lima Drive in the southernmost part of District 9. This development is northwest of the intersection of Lockhill-Selma Road and West Avenue within perhaps five blocks of the San Antonio - Castle Hills city line.

Until acquired by Meritage, the site had been a wooded area directly west of the First Nazarene Church that is located on Silver Oaks. The Meritage Company cut down all the trees – every one of them – sheared off the top of a hill, and then laid out several streets before building their homes. The Pastor of the Nazarene church stated that in clearing the construction site immediately west of the church, the Meritage people took out all the trees and leveled the building site -- accomplished mainly by grading and moving around existing soil and rock, but also by bringing in some fill material. The Meritage Company did speak with the Pastor and assured him that the drainage channel would only be displaced about five feet and, in any case, the impact on the church (in Meritage's view) would be slight.

DISCUSSION OF DRAINAGE/FLOODING PROBLEM

Castle Hills voiced its concern with District 9 over a growing flooding crisis immediately south of Lockhill-Selma along Manton and nearby streets. The Castle Hills authorities report that up to two feet of water covers Manton Street during a storm of perhaps two inches per hour. The great majority of this stormwater originates at the Meritage construction site on the San Antonio side. This water, which is a curious white and brown mix, flows past the First Church of the Nazarene, has twice knocked down a retaining wall in a District 9 Neighborhood just east of West Avenue, and enters Castle Hills on the palatial grounds of a home fronting on Lockhill-Selma.

The flow of water tends to follow an ancient natural creek which has been disrupted by construction. As mentioned, the water crosses Lockhill-Selma and a Castle Hills estate, cuts across the front yard of a home on Manton, and then spills into a concreted drainage ditch. At Manton itself, curiously, there is no under-the-street culvert. The lack of a culvert forces the water to pass over the street until it can reach the concrete drainage ditch on the eastern side of Manton. The incoming water gains momentum partly because the ancient creek has been channeled at this point. *But the key element here is that no viaduct was built when Manton was platted.*

Castle Hills correctly identified the Meritage construction area as being the principal source of the stormwater. Because Meritage totally clear-cut all trees and other vegetative growth to make way for eighty new homes, leaving not so much as a stick or weed on its property, they removed any vegetation that would have absorbed much of the rainfall. The construction site is essentially "bald" and gives no possible way for the water to do anything but run downhill in force, carrying silt, small rocks, and other debris with it. The homes and streets permit "zero" percolation.

Compounding this inanity was construction of a ponderous solid concrete fortification that the Team dubbed the "Maginot Line" – nine feet high and several hundred feet long – supposed to catch run-off. Two culverts from Meritage's streets approximately ten feet higher do empty into the supposed "catch basin." The basin has an eight inch exit or "weep hole" designed to release water gradually (in theory.) Cracked clay does indicate that the "catch basin" has occasionally retained some water.

What is truly mean-spirited on the part of Meritage, and worthy of condemnation, is the fact that the company saw fit to build a four foot broad spillway around the "catch basin." *This spillway intentionally diverts water from Silver Oaks and other streets just above Meritage's development and, instead of directing this water INTO the "catch basin" the spillway deliberately channels the water AROUND the basin and releases it into a swampy area just below the Nazarene church. In effect, this spillway defeats the purpose of the "catch basin" thus making it, like the original Maginot Line, virtually useless.*

A Team inspection that took place about two hours after a relatively light shower revealed that although run-off from Silver Oaks had diminished, it was still rapidly flowing into the *diversionary* channel. The diversionary channel had about an inch of water as did the "catch basin" but whereas the water in the "catch basin" was stationary, that in the diversionary channel was moving at considerable speed. The water from the diversionary channel enters a swampy area on the church's property, then cascades through a D-9 neighborhood and finally enters Castle Hills, bearing silt and sediment.

COMMITTEE'S RECOMMENDATIONS

The problems that we face were, in our opinion, caused by callous disregard of Nature by Meritage in their pursuit of quick gain. It may be that their greed – paving across natural drainage patterns and ignoring the key importance of preserving watershed – was coddled by weak (or even non-existent) Code provisions in both San Antonio and Castle Hills.

The key to solving the flooding on Manton Street is for Meritage to be persuaded to close their diversionary channel (which should never have been built), thus capturing the run-off from Oak Springs Street along with their own streets in the huge concrete "catch basin" (dubbed the Maginot Line). Earth remediation as suggested by the "SA Tomorrow" consultants could help absorb this "caught" water, allowing it to percolate slowly into the ground rather than gather force and flood lower elevations. Similar remediation technology could absorb additional water if applied on the creek passing through the swampy area of the church's property.

As regards Manton, there are two key actions required. First, the City of Castle Hills should build a culvert beneath Manton where the water necessarily must flow. This entails tearing up about twenty feet of the street and making a capital expenditure to build what should have been built at the time Manton was platted. Second, a channel should be built following as closely as possible the natural creek to guide stormwater crossing Lockhill-Selma.

Meritage's actions are truly reprehensible. The idea of building a colossal concrete structure to "contain" water from two of its streets – *and then to build a spillway AROUND it is, at best, mean-spirited and short-sighted.* How Meritage received City of San Antonio permission to do this should be investigated by District 9 staff. In effect, Meritage has been "licensed" to dump water downhill that they (and City staff) almost certainly knew would add to Castle Hills' water problems. Meritage has violated a key principal that it "cannot make drainage matters worse" than they were before development; they have done precisely that. Property owners "downstream" might find grounds for a tort due to Meritage's negligence and/or possible violation of Code.

In view of the foregoing, the Meritage people should be requested to close the "spillway" and reroute all incoming rainwater INTO the supposed "catch basin" instead of around it. Should Meritage refuse a polite request, the City should withhold any new requests by Meritage for other building permits.

The Church of the Nazarene should be encouraged (with City help) to thickly plant water-hungry vegetation all along the natural drainage area dividing its property from that of Walgreen. The more such plantings, the more water run-off will be absorbed. By channeling rainwater into the Meritage "Maginot Line" instead of by-passing it, by controlling outflow from the "catch basin" and by planting water-absorbent plants downstream in the Nazarene area, what remaining water reaches Manton Street would be channeled underneath the street and safely into that City's concreted drainage system. The Manton flooding should be ended.

Not least, both San Antonio and Castle Hills must review their existing Code governing new construction of streets and housing, and make clear provision for the intelligent handling of rainwater. There is no excuse whatsoever for clear-cutting of new construction sites and callous disregard of natural drainage patterns as done by Meritage.

NOTES

We believe TCI will study the entire area and recommend a solution for potential Bexar County or Castle Hills funding since, in TCI's opinion, the downstream portion of a combined project needs to be constructed first.

In contrast to TCI's view, the D-9 Committee considers that the first step, the essential step, is to approach Meritage in a friendly way to persuade them to close off the diversionary system. If this approach fails, however, the City should not shrink from using stronger measures to ensure compliance.

Although developers are not required to fix existing problems, as pointed out by Mr. Akiona they cannot make them worse as a result of their development. Meritage has done just this.

ANNEX ONE TO CASTLE HILLS – MERITAGE COMPANY AREA FINDING

OBSERVATIONS BY FIRST NAZARENE CHURCH PASTORS

The First Church of the Nazarene was built in the mid-1970s. At that time the lower end of the church's property, as it does now, bordered on a creek or natural drainage channel. Much of this channel follows or parallels a now-closed road, Anchor Street, which has been eliminated with the City's permission.

Senior Pastor Rice has been at the church for fourteen years. He mentioned that, when there is a two inch rainfall or more, there is a "constant, steady flow" down the ancient drainage channel. Since there is no culvert on West Avenue through which the run-off might pass, rainwater necessarily passes over West. Pastor Rice mentioned that the force of the water has at times been so strong that it had knocked down a decorative wall (repeatedly rebuilt) in the neighborhood immediately east of West Avenue which is part of District 9. Finally, the neighbors put up an iron fence which can be observed from the church's property. The fence permits stormwater to pass unimpeded, though at high speed.

With the permission of Pastors Rice and Grose, I toured the lower edge of the church's property to get a direct understanding of the water problem. Even though much of the water from an overnight storm had drained off by 1030 hrs, it was clear from the bent grass and debris that a considerable volume of water had passed through there earlier. In fact, there were still two large pools of water on the property – one of which was perhaps fifty feet long and completely covered the portion of the former Anchor Street that once adjoined West Avenue. Water was still entering the property from the Meritage site, albeit in diminished volume when I observed it. A LOT of litter and rubbish (cans, bottles, plastic) had washed down from Meritage onto the church's property.

The pastors were well aware of the huge concrete structure intended to impound water from the home site, but were surprised when Meritage built the diversionary channel carrying run-off from Oak Springs.

I then drove down West Avenue (water was still crossing the road) and turned left on Lockhill-Selma to proceed to Manton. About an inch of water was passing above the pavement at Lockhill-Selma since there is no culvert there. I parked at Manton (ca 1040 hrs) and observed the creek at that point. Water was flowing from the estate just above Manton (which fronts on Lockhill-Selma) and crossing over Manton, since there is no culvert that would permit the water to flow beneath the street. The water had an odd "whitish" look to it mixed with the expected brown.

ANNEX TWO TO CASTLE HILLS – MERITAGE COMPANY AREA FINDING

OBSERVATION OF CITIZEN RESIDENT OF LIMA STREET AFFECTED BY MERITAGE

Subject: Fwd: Citizen Service Request

Good evening Honorable Joe Krier, City Councilman District 9,

I am writing this email to request your help to solve some problems on my street.

My neighborhood street was destroyed by the Meritage Home contractors that built a new gated community at the Preserves at Castle Hills. My neighbors and I are really concern because we can't solve this problem without your help.

They purposely used our street which is suppose to be a dead-end street to access their construction site. Our street now has a lot of deep potholes and it is in really bad condition, we can barely drive our cars on it. The construction of the new community has also prevented rain water from flowing to the drainage, so now every time it rains, our yards get flooded.

Since they reconfigured the back side of the dead end street they now put up barricades which could have allowed an alternative route we could have used to exit the neighborhood.

In close, I am asking for your help to:

- Repair the pavement on my street.
- Build sidewalks on my street, like those on the other streets around us.
- Build the necessary infrastructure to properly drain the water when it rains.

I am a San Antonio tax payer and I am requesting your assistance in getting these problems fixed. See the attached photos.

Respectfully

Laura Rohana
11015 Lima Dr.
San Antonio, TX. 78213
210-213-3282

PS. I am talking about the portion of Lima Drive between Larkspur Dr. and Silver Oaks Dr.

3B. CASTLE HILLS – CAROLWOOD AREA

OVERVIEW OF AREA

Carolwood Drive is located in the far south of District 9 in a triangular area bounded by Blanco Road on the east and West Avenue on the northwest. Carolwood crosses Lockhill-Selma Road almost exactly one half mile southeast of its intersection with West Avenue where it enters the City of Castle Hills. The northern portion of the street, bordering a grassy swale, lies entirely in District 9. However, after Carolwood crosses Lockhill-Selma, there is no swale on the Castle Hills side. There is a flat grassy area on the District 9 side which has a few trees in its southeastern corner. Along Lockhill-Selma there is a three-deep barrier of concrete blocks intended to slow the speed of stormwater as it exits San Antonio.

DISCUSSION OF DRAINAGE/FLOODING PROBLEM

Carolwood Drive is divided by Lockhill-Selma into a northern part in San Antonio and the southern part in Castle Hills. On the San Antonio side there is a grassy (non-concreted) drainage ditch perhaps twelve to fifteen feet wide above which there are low bridges on streets such as Mount Rainier, Melissa, and Grey Oak. This drainage ditch passes under another low bridge at Mount Eden and there empties into a large grassy field where, during heavy rain, it fills the entire basin at least a foot or so. This area, which may once have been a natural pond, is perhaps 150-200 feet in diameter. Stormwater then crosses Lockhill-Selma, passing through a triple row of concrete "teeth" meant to slow the water somewhat.

Once the water crosses Lockhill-Selma, it pours down the Castle Hills part of Carolwood before it turns left at the corner of Carolwood and Banyan. (We do not know where the water goes from Banyan.)

There is some dispute whether the grassy area – which is about as big as a kids' baseball diamond – was or was not a pond or lake in former days. There are two sinkholes with limestone cobbles showing. It is clear that extensive silting has taken place over the years. A District 9 resident, Mr. Robert Streckfus, told us that sometime in the last two or three years, persons unknown had illegally dumped chunks of bricks and concrete into the drainage ditch, making it difficult for him to mow the ditch. Heavy rains merely carry this debris down to Mount Eden. Mr. Streckfus also mentioned that each year he collects and removes 750-800 pounds of cans, bottles, and other litter that washes down the ditch from upstream. We conclude that the trash in the swale is partly due to illegal dumping, and partly simple disregard for the community in the form of wanton littering.

So far as the grassy area itself, Mr. Streckfus objects to the City bringing in "heavy equipment" to the area since "agricultural tractors" tear up the ground. He said that turning the grassy area into a park would "create problems of another kind" which we did not pursue (probably he meant that criminals or drunks would be attracted to the area.) He did, however, tell us that he would not object to the City bringing in an institutional mower once in a while to control the grass.

Interestingly, the part of Carolwood on the Castle Hills side appeared almost "dry." The open grassy area showed where an enormous pool of water had been, marked by a ring of leaves and debris. There were four or five pockets of water remaining along what was the ancient creek channel. Some water (perhaps half an inch) was still crossing Lockhill-Selma from the San Antonio side to the Castle Hills side, but it was not enough to obstruct traffic.

COMMITTEE'S RECOMMENDATIONS

As regards Carolwood, north and south, the City of San Antonio should immediately clear the drainage channel of the bricks and concrete left by the illegal dumping. The local citizens would happily mow the now-clear grassy swale.

The open grassy field where the water collects should be partially landscaped, with a low berm (two feet) built parallel and immediately adjacent to Lockhill-Selma. This area should be thickly planted with water-absorbing plants (there is only one live oak presently.) The area furthest from Lockhill-Selma should be left as an open grassy playground.

Materials similar to those advocated by "SA Tomorrow" and plants such as water loving shrubs should be planted along the main drainage route and parallel to Lockhill-Selma. This measure should go a long way toward reducing the outflow of rainwater. The plantings also would help mask the nearby houses (enhancing privacy and appearance) and give the impression of a "park."

The City of San Antonio should avoid the use of heavy "agricultural" equipment and instead provide regular "institutional" mowing of the grassy area described.

On the Castle Hills side, thought should be given to a redesign of that street – possibly a slight widening and deepening in the center of the street – so that what rainwater is not stopped on the San Antonio side can be more effectively channeled until it reaches a concrete culvert, swale, or natural creek. Curbs would be helpful. Not having observed Banyan, the team can make no recommendation concerning that street.

NOTES

The "SA Tomorrow" group (sponsored by the City Planning Department) can make cogent recommendations for street design, water handling, and specific types of water-absorbing plants.

4. PANDA BEAR DAY CARE CENTER

OVERVIEW OF AREA

The Panda Bear Day Care Center is a small preschool children's care center located on Encino Grande Street immediately behind the Brookhollow Shopping Center on Brook Hollow Boulevard. It hosts 85 children of working parents. Many of these children use the playground on the north side of the Center which directly overlooks a very ratty semi-paved drainage area having stagnant pools. By Texas state law the children must go out of doors twice a day.

Encino Grande leads into the Shady Oaks Neighborhood which is situated west of the Omar Bradley Middle School and east of US 281.

DISCUSSION OF DRAINAGE/FLOODING PROBLEM

The drainage problem at the Panda Bear Center is caused by a drainage swale that has very little if any gradient, is pitted with many potholes that retain fetid water, and is polluted by effluent from a Chinese restaurant ("Lung Fung") and a bar ("The Tavern") which empties into the swale. In the team's opinion, the swale is carrying potentially hazardous waste from those clubs or possibly other sources on the west side of U.S. 281. Our host told us that, upon occasion, toilet paper and feces have been seen in the sewage water that emerges from a cavernous culvert. *[Note: The team was unable to confirm this assertion during our inspection.]* A large culvert, somewhat oval in shape, and measuring perhaps six feet at its base and possibly four or five feet in height, carries water and debris from an unknown point of origin. The team attempted to locate its ingress and walked all the way to the frontage road on the east side of U.S. 281 but located no obvious intake. We therefore suggest the possibility that the ingress for stormwater and debris may be on the Hill Country Village side of U.S. 281.

The section of swale in question forms the northern edge of the Panda Bear Center and goes the full length of the property. It has a sharp odor and reportedly is a breeding ground for mosquitoes. During our inspection we observed at least a dozen small children (ages 4 or 5) playing in a fenced-in yard of the Center that is perhaps only thirty feet from the swale. In view of the Zika virus, and the prevalence of mosquitoes, we judge the swale in its present condition to be a potentially serious health hazard due to pools of water captured in the many eroded pits.

Our host stated that she had called SAWS about this problem and within one hour (exact date unknown but in November 2015) the SA Water System had a remediation team on site. Unfortunately, the SAWS team could not make effective use of its heavy equipment due to problems of access.

The swale rests directly on limestone bedrock which, in places, has been sloppily "patched" by a cheap grade of cement (a la "cold patch") in a hasty attempt to fill holes. Much of the patch has, however, been eroded and washed downstream by torrents when the swale is in flood. We also explored the "downstream" part of the swale and found rocks and pieces of concrete on the east side of Encino Grande. Further along to the east, the swale becomes weedy and indistinct.

One positive feature is the viaduct underneath Encino Grande which is well built, in good shape, and perhaps eight feet wide and with three feet of clearance. Only a few stones were observed inside this viaduct. However, there is a kind of "apron" on the swale just west side of Encino Grande leading downward about two feet from the swale to the viaduct. The team holds the opinion that this "apron" actually retards the flow of water into the viaduct. (This "apron" is slightly higher than some of the bedrock on which it sits.)

Because the swale itself does not have a steep enough slope to be effective in draining off rainwater, the pitted nature of the bottom tends to trap puddles of water. The "apron" should be removed and a steeper gradient carved out.

COMMITTEE'S RECOMMENDATIONS

The team believes that, in the Panda Bear case, it is necessary to move stormwater -- and waste water, if from the bar or restaurant -- along as rapidly as possible through the swale to the grassy absorption area on the east side of Encino Grande. Toward that end, a concrete berm should be constructed on the Panda Bear side of the swale, and the basin itself should be deepened and graded to create a sharper slope. The "apron" in front of the Encino Grande viaduct should be removed to enable this grading. In this particular case, the team recommends a fully concreted swale be built, at least to the Encino Grande viaduct.

The team also believes that the City must conduct more frequent health inspections to test the effluent observed coming from the bar and/or Chinese restaurant. The source of the effluent must be pinpointed. If from The Tavern or the Lung Fung restaurant, public health officials must enforce the existing ordinances on disposal of waste materials. And if the sewage originates from sources in Hill Country Village (on the west side of U.S. 281) contact must be made with the health officials in that City to take corrective steps.

NOTES

A City health inspector found no evidence of feces or toilet paper. The District 9 team also did not see any such material, but did definitely observe some sort of "black slime" emerging from a pipe emanating either from the bar or from the Chinese restaurant. The ooze flows into the swale where it possibly is a food source for mosquitoes, flies, and other pests.

Ms. Carlyn Esparza, Director of the Panda Bear Day Care Center has sent photos of the swale to Mr. Orlando Ramirez of the District 9 staff. If you look closely you can see wads of toilet tissues. These photos were taken on 12 November 2015. SAWS came out the same day but, as stated, could do little.

Despite the almost drought conditions in July 2016, there is nevertheless standing water in the swale that is milky and reddish in color.

5. PANTHER CREEK AREA (MELANIE CIRCLE)

OVERVIEW OF AREA

Panther Creek is a natural stream lying north of Loop 1604 and Huebner and west of Blanco Road not far from Camp Bullis. It is in the far northwest of District 9. The development was created in 2007 and the first homes built in 2009 by McNair Custom Homes. Today there are 42 homes loosely organized into a Homeowners' Association (HOA) chaired by McNair. The Panther Creek homes front on the creek which lies at the foot of a high cliff which is owned and being developed by Greystone Corporation.

The area of drainage concern along Panther Creek is just above the bridge on Blanco Road under which the creek – during a flood event only – passes on its way to Salado Creek. After passing under the Blanco bridge the creek flows down past the Sonterra Golf Club area.

DISCUSSION OF DRAINAGE/FLOODING PROBLEM

This is the only case examined by the team in which geology – rather than poor development practices – is to blame. Panther Creek forms a large arc (a “lazy” letter C) completely surrounding Melanie Circle. Not obvious from a map is a high limestone bluff on the opposite (south) side of the creek from the homes. The bluff not only shapes the creek bed but may be weathering stones and particulate matter into Panther Creek. Years ago the creek may have flowed freely, but an immense amount of detritus has collected that forms an impenetrable “plug” perhaps eight to ten feet thick and maybe 200 feet long that prevents water from draining properly. As a consequence, a portion of the creek – about eight feet lower than the area of sedimentation – has formed a stagnant pool. This exceptionally low spot has been dubbed “Lake Putrid” and is several feet deep and fifty to seventy feet long. It is an incredible breeding ground for mosquitoes and therefore constitutes a clear health and safety threat. Since we live in the Age of Zika, in our view the pond must be eliminated for reasons of public health.

Our host noted that several years ago he planted a metal fence post in the middle of the creek bed and marked levels of standing water at six inch intervals. The water reached 4.5 feet -- and was underwater after every rain. Hence, after the rain ceases there is standing water over five feet for up to three days.

Underlying the creek bed is a layer of limestone covered by a thin veneer of clay. In times of drought, when water is low, dry “Lake Putrid” is covered with leaves. The leaves and clay prevent absorption of creek water into the underlying limestone base. Panther Creek may be part of the Edwards Aquifer Recharge Zone but, as a tributary of Salado Creek, is of concern to SARA. The central problem to be resolved is the “ponding” effect of Panther Creek as the water can neither move forward, nor around the “plug” of mounding, and the clay (etc.) prevents quick percolation of creek water into the limestone.

It is clear that only in times of very high water could Panther Creek flow from the vicinity of “Lake Putrid” to its egress beneath the Blanco bridge. Here and there in this immense “plug” are blocks of limestone, and the limestone base (in some areas) actually is higher than “Lake Putrid.” The underbrush is very thick and posed an obstacle to the team’s exploration. However, by the same token, this area is also excellent habitat for wildlife. Our host mentioned that the trees both enhance the area and also contribute somewhat to the problem.

Of interest is the fact that above “Lake Putrid” Panther Creek is filled with numerous limestone cobbles, but very little overburden. The geology of the creek is therefore “high, low, high.” That is, the upper area of the creek is higher than is “Lake Putrid” (the lowest point) but then due to the “plug” the creek bed rises again to block the egress of water from “Lake Putrid.”

COMMITTEE'S RECOMMENDATIONS

The objective here is to reestablish a channel to permit Panther Creek's water to flow unimpeded past the Melanie Street area and on to Salado Creek.

We must start with the creek's odd geology which is effectively "high, low, high." This suggests three possible options – or a combination of the three. The first option is to remediate the creek bottom underlying "Lake Putrid" --the ponding itself – basically scooping it out when dry to a depth of thirty inches, then backfilling it with a mixture of crushed granite, sand, and water permeable materials. This would permit the creek water to percolate more easily into the limestone. This option is fairly cheap and almost certainly would have low impact on flora and fauna. Moreover, if done properly this measure would eliminate "Lake Putrid" and thus the mosquito breeding area.

A second possibility (which has been used successfully in Fairfax, Virginia) is to carve an artificial channel through the "plug" that currently prevents clear flow from higher to lower levels. If "Lake Putrid" were left at its current low level, such a cut would have to be eight feet deep in places since the mound of rock and mud is quite high. The object would be to enable creek water to drain more easily and pass from the low point that now constitutes "Lake Putrid" down to Salado Creek. In effect, the City Engineers would be undoing Nature's work of erosion and deposition. Lidar data suggests the gradient is not sufficient, so the area needs to be surveyed to ensure that this alternative is feasible.

A third option is simply to fill in "Lake Putrid" with rocks and cobbles to the height of three or four feet. This would effectively raise that portion of the creek bed so that it was almost level with the ingress of water from upstream and just slightly lower than the immense "plug" below it. However, inasmuch as there would be several feet of mixed rocks and gravel, there would be no standing water. If "Lake Putrid" is filled in, an engineer will have to certify there is no adverse impact on homes nearby.

However, perhaps the best approach would be a *blend of these three options*. It may be possible to dig a new "downstream" for Panther Creek from "Lake Putrid" to the bridge while slightly raising the level of the creek bed with rocks and cobbles to partly fill in "Lake Putrid." Light remediation might be undertaken prior to adding the new layer of imported rocks. Indeed, while not cheap, this might be the most cost-effective way to solve the problem for the longer term. This is because Panther Creek would be "re-engineered" to be more or less "level." The goal is to replace "high, low, high" with "high, slightly lower, and lower still." The water would drain, there would be no trapped "Lake Putrid," and the mosquito population would suffer a great decline. Again, a survey of the drainage gradient is required.

NOTES

A team member discovered that the likely owner of the creek bed is the "Reitmeyer Investment" company. It is our understanding that none of this area is City owned. Because private interests are involved, the City would first have to secure permission from the legal owners before any correction or remediation could take place. We presume that TCI or BCAD could ascertain precisely who has title to the land. At that point the City Attorney could open negotiations with that entity.

Because Panther Creek is a natural area, the Army Corps of Engineers (ACE) or the San Antonio River Authority (SARA) must be consulted. Our host has just received word from SARA that ACE had approved construction of a pilot channel to facilitate movement of runoff water in October.

Our host, Col. Larry Lewis, does not favor Option #3. In his view, raising the level of the creek bed too much would move the water further out of its banks than current rains do unless a channel is dug all the

way to the Blanco bridge and was deep and wide enough to carry ALL the runoff all the way past the entire subdivision. No amount of fill can soak up all that water quickly enough. Watching water come further/wider out of the banks is scary and would most certainly affect home values.

Col. Lewis believes that the esthetics of the look of a flat riverbed is visually disturbing. Moreover, he is concerned that if stream reconstruction follows Option #3 simply because it is cheaper, over time there will be renewed blockage and fill. This not only would be disastrous but require further expensive work to "correct the correction." The team concurs in this view and believes that those who will oversee this remediation work would be wise to spend a bit more now to avoid costly work later. A deeper, wider channel plus the more shallow rock fill seems preferable and safer to residents than Option #3.

6. SHADY OAKS (PASO DEL NORTE) NEIGHBORHOOD

OVERVIEW OF AREA

Shady Oaks is an upscale Neighborhood sandwiched between U.S. 281 on the west and Blossom Park (the park) and the Omar N. Bradley Middle School on the east. Home lots are very spacious ranging from half an acre upwards to some estimated at two acres. For the most part, the homes are built on land that is at least ten to twelve feet higher than the natural drainage through the area. The Neighborhood, however, slopes downward fairly steeply from west to east, and there have been reports of a few Shady Oaks homes flooded near the confluence of the creeks.

Natural drainage consists of three creeks which come together behind the park and school and which ultimately empty into the Lorence Creek system. Two of these creeks originate west of U.S. 281 (in Hill Country Village) and flow eastward toward Bradley School. These two creeks carry trash as well as water. The third creek originates at or near Brook Hollow and flows north to meet the other two creeks. [In fact, it might be a lower part of the swale that adjoins the Panda Bear Center.]

DISCUSSION OF DRAINAGE/FLOODING PROBLEM

There are two areas in the Shady Oaks Neighborhood that routinely are closed due to flooding. One of these is on Paso del Norte Street about a quarter mile inside the Neighborhood from U.S. 281. The problem here is that the developer simply paved over a portion of the natural drainage system – the northernmost of the three creek beds. Because that is the case, there is a pronounced low dip in Paso del Norte and during a flooding event the street becomes impassable. Even after the storm passes, the dip becomes a “basin” and tends to trap water. There is standing water above this low place – almost a kind of “pond” -- and a rocky outcrop on the south side of the road. [The point was made that this standing water was a breeding ground for mosquitoes.]

The developer of Shady Oaks created a second such area by paving over the creek bed where it crosses Encino Grande at its intersection with Rio Bravo Street. This area of pavement is almost a steep “U” shape leading from Paso del Norte to Encino Grande. The dip must be at least six feet deep. Indeed, there is a flood gauge on one side of the dip and a depth marker on the other. The developer did think to put two undersize pipes under the pavement, but these are grossly inadequate to handle more than a light trickle of rain. Moreover, a huge pile of rocks and other debris has built up just above the two pipes over the past twenty years. The team observed that brush and pieces of plastic had partially clogged the two concrete conduits.

Both of these dips – probably paved over well before there were any Code provisions regarding drainage and flooding – *have the potential for sealing off a good portion of Shady Oaks Neighborhood in the event of heavy rains leading to a flooding event.* Indeed, this problem was reported by our hosts, and it is clear that in the past both roads were made impassable by high water. In the committee’s view this blockage poses a “health and safety risk” for the reason that a person needing urgent medical treatment (eg. stroke, heart attack, serious accident) could not be evacuated from Shady Oaks – even by the SAFD using its heavy trucks.

The committee also is concerned with the viaduct beneath the Frontage Road next to U.S. 281 which brings stormwater (and much trash) into Shady Oaks Neighborhood from Hill Country Village. It was immediately apparent that this viaduct was not draining properly due primarily to the build-up of sand and silt to two feet thereby blocking the egress of the water. Indeed, there was between four and six

inches of standing water inside the viaduct that could not escape because of silting. Not least, a short tree was growing inside one of viaduct's arches, and brush and flotsam further clogged the viaduct.

COMMITTEE'S RECOMMENDATIONS

If funds permit, the City should build two true viaducts – one on Paso del Norte and the second on Encino Grande to enable ease of egress for residence or ingress for emergency vehicles. This would help connect the northern and southern halves of Shady Oaks and would enhance the safety of the Neighborhood. If cost is a consideration, then the viaduct on Paso del Norte should receive priority.

A low viaduct also might be considered for the site on Rio Seco Street where a minor creek flows from the southwest across the street to join the larger tributaries behind the park.

Sand, mud and other debris should be removed from the viaduct beneath the U.S. 281 Frontage Road to permit easier water flow.

City authorities might tactfully approach their counterparts in Hill Country Village concerning the amount of trash and other waste materials that wash through the Frontage Road viaduct into Shady Oaks. These materials are improperly dumped by commercial establishments west of U.S. 281.

NOTES

TCI is considering construction of two large reinforced concrete box culverts to help in channeling stormwater across Paso del Norte and Encino Grande. The committee enthusiastically supports this effort. In addition, curbs, sidewalks and driveway approaches would be welcomed.

Mr. Reinhardt of TCI informed the group that during heavy rains some 1,500 CFS pass through the U.S. 281 viaduct. He wishes to maintain insofar as possible the natural flow pattern of the main creek. The committee also applauds TCI's plan to remove the sediment and small tree.

Although the culvert at Encino Grande is clearly inadequate for handling any but a minimal volume of water, the City thoughtfully put a Warning sign there and a flood gauge showing the "draw" to be a minimum of five feet below where it should be. It is clear that this deep "draw" would collect water and be a public danger in times of flooding should someone attempt to cross against the warning signs.

Shady Oaks president Mr. Hawthorne suggested that a "retaining pond" be built immediately along the Frontage Road to capture stormwater (and huge amounts of rubbish from Hill Country Village.) There is a derelict home immediately northeast of this site which Mr. Hawthorne believes will be demolished. A gravel alley leads from Paso del Norte past SONA boundaries to a trailer park.

One other fact that must not be lost in the shuffle is a Team member's statement that the home of a friend, Mr. Alex Perez, of 106 Palo Duro, which is located near the confluence of two of the main creeks in Shady Oaks, regularly floods. Although the group did not visit this site, and no recommendation was made, the team notes this information "for the record" so that it is not ignored.

Getting a grip on Flooding

By Larry Lamborn, NCTONA president
Chairman, Council District 9 Drainage and Flooding Committee

Water is essential to life. But it is also a threat to life. If water collects in stagnant, fetid pools, it becomes a breeding ground for mosquitoes, flies, and vermin – hence a threat to health such as the Zika virus. If in powerful unstoppable torrents, floodwaters can sweep away even armored vehicles as I witnessed in South Korea and heavy trucks in Afghanistan. Recently, we were saddened by the drowning deaths of our soldiers at Fort Hood. Some years ago our Neighborhood, NCTONA, witnessed the drowning of a young mom who tried to drive through Lorence Creek during a flood event. Her tragic death eventually resulted in building the bridge over Lorence Creek on Henderson Pass. Had the bridge existed at that time – instead of just a paved creek bottom – perhaps that mom would be alive today and I wouldn't be writing this column.

Unfortunately, we either tend to ignore water entirely or underestimate its power. For decades our builders have ignored water, or not given it enough respect. Until 1997 there was minimal Code pertaining to drainage/flooding and no real requirements for developers to pay attention to what happens downstream of their new development. Many structures built before 1997 – roads, parking lots, alleys, etc. – took little notice of the potential for flooding downstream. (Hint: you the Taxpayer will get the bill through your taxes to correct what should have been done right the first time around.)

Today the City's Regional Storm Water Management Program is no longer a voluntary program, but is still not as strong as it should be. A developer has three options. He may: 1) provide a detention basin; 2) pay a FILO ("fee in lieu of") if he can prove his development will not impact downstream properties, or 3) mitigate his impact by improving downstream conditions. The developer may pick any of the three options. Unfortunately, I am witness to the fact that a certain developer received a permit – even built a catch basin – but then defeated the intent of our weak regulations by building a diversionary stream around their basin that flooded householders living downstream. This is unacceptable.

Compared to some other older San Antonio Council Districts, our District has been relatively fortunate. Nevertheless, some D-9 homes, including several here in NCTONA, have been flooded and damaged by raging water. Although we have been extremely lucky, other areas in Bexar and neighboring Comal counties have seen homes actually swept away by flooding. Over the years the City of San Antonio has been forced to purchase some 430 homes that had been built unwisely in floodplains or endangered areas. You might ask why these homes were built where they shouldn't have been. The answer is simple: at the time these homes were built – before roughly 1975 – there was nothing in the City Code saying that they couldn't be built in a flood-prone area. Again, the taxpayer (you) got to "purchase" the homes that were washed away.

In 1968, the National Flood Insurance Act was enacted which created the National Flood Insurance Program (NFIP). The City first adopted floodplain ordinances in the 1970s. FEMA still allows residential structures to be built within a floodplain, but the City's standards now prohibit this. Older homes, however, may still be found in potential flooding areas. There is also the problem of storm water from higher levels cascading down hillsides into homes. Two prime examples here in District 9 are the five homes flooded in NCTONA and several more in nearby Blossom Park Neighborhood Association.

Most San Antonians are aware that there are some 150 known "low spots" in our City, the majority of which are caused because roads were built directly upon creek beds. That works fine so long as there is no rain. But when we have two inches or more of rain, many of these "low spots" in our roads are often flooded and therefore closed to traffic. After the flood waters recede, stagnant pools are left behind due to poor drainage. Check: <https://gis.sanantonio.gov/PW/LowWaterCrossings/index.html> for a useful map. I should note that there are still many localized areas not shown on the map that may "pond" water in a roadway due to poor infrastructure, but the City does not classify these officially as "low water crossings." Still, these "ponds" breed mosquitoes and flies.

Why should Bexar County year in, year out have repeated problems with flooding? The answer is a combination of natural and manmade factors. In part, our water problems are due to climatic patterns, especially El Nino, and the unique geology of our area. El Nino can bring torrential rain. Moreover, much of San Antonio sits on thick limestone beds overlain by a relatively thin layer of clay which, when wet, beads up and then becomes impermeable. Thus, periodic heavy rain and the nature of our rock and soil are partly to blame.

But the hard fact is that we Texans are our own worst enemies when it comes to flooding. In all but one of the cases that I have investigated as Chair of CM Joe Krier's D-9 Flooding and Drainage committee, the blame for flooding must be laid at the feet of the development community. These cases of flooding were manmade – hence, preventable. The great majority of localized flooding has been caused by developers using cheap and quick methods such as paving directly on creek beds (eg. Lorence Creek before 2004) instead of building viaducts over the streams, asphaltting huge sloping areas for parking lots (making it impossible for the water to go anywhere but downhill into peoples' homes,) and constructing narrow concrete channels that merely concentrate rainwater rather than dispersing it (eg. Oak Pebble.) Yes, all these methods are perfectly legal and within Code as it stands. And yes, these methods are cheap for the developers. *But as taxpayers we need to ask if these methods really are so cheap.*

Rainwater is best handled in three ways: it should be spread out, not concentrated. It should be slowed down, not speeded up. And best of all, it should be absorbed into the ground, not dumped on someone else. However, current developer practice – emphasizing the old stand-bys of asphalt and concrete instead of more thoughtful approaches – has exactly the wrong effect. Instead of spreading water into thinner sheets, common practice is to channel it tightly. Tight channeling merely concentrates the water -- which speeds it up and increases its power. Far from being absorbed, as Mother Nature intended, paving over large surfaces with asphalt merely prevents water from percolating down to the water table. Instead of being absorbed, the water is merely dumped on hapless people who live downstream. Burr Oak and Blossom Creek NAs are superb examples.

While the old-fashioned methods are cheap and quick for constructing roads, parking lots, and buildings, in the longer run they are extremely costly to the taxpayer. This is because the resulting flooding wrecks homes, erodes soil (and even paved roads), and requires expensive repairs. While the developer makes a quick buck and goes on to his next project, ultimately it is the Bexar County taxpayer who gets stuck with the tab. A perfect example of this false economy is the paving of a Shady Oaks road directly on a limestone creek bottom which cost the developer a few hundred dollars for the asphalt. (He avoided building a small viaduct, which at the time, might have cost him a few thousand.) However, when heavy rain falls, that road is impassable and Shady Oaks is cut off from hospitals, schools, and food stores. How would you like to be seriously ill, but trapped and unable to get out of your Neighborhood to see a doctor? A viaduct over that creek now will cost you (the taxpayer) several million tax dollars.

Moreover, over the years the constant eroding power of water has pitted every cheaply-made road (and even some of the best roads) not only in Shady Oaks NA but everywhere in Bexar County. Flooding and drainage problems deeply affect our roads and sidewalks. In the past, developers quite often used the public streets as their "storm sewers." Even today many residential streets become shallow lakes when it rains. Sometimes you can even see deposits of rocks and gravel left behind on these streets!

It may be beyond our means – perhaps impossible – for us to correct all the sins of the past. We will simply have to live with a lot of these past sins and do the best we can. *But it makes no sense whatsoever to keep making the very same costly blunders in the future.* An American axiom is: *"Do it right the first time."* Why do we keep ignoring this wise principle and end up having to do the "right thing" only later -- at much greater cost? Doing it wrong the first time is pretty dumb -- and very costly.

San Antonio expects one million new residents in the next 25 years or so. What does it tell these new people if we have repeatedly ignored problems of impassible "low spots" or not considered that many of our streets are pitted and some homes damaged or destroyed by highly channelized, down-rushing torrents? If changes are not made now to strengthen the Code and require developers to do more to prevent flooding -- using smarter techniques to prevent or lessen the danger of flood waters -- we will simply create the conditions for extremely expensive taxpayer-funded remediation in the future.

There is an old saying we should heed: *"You can pay me now, or you will pay me later."* Fact is, what is "cheap" really isn't cheap in the long run. We have no one to blame but ourselves if we sit with folded hands....do nothing....and simply repeat the same mistakes of the past by allowing "quick and cheap" construction techniques to continue unchanged into the future.

