

1. Administrative Details

Proposal Name: Metropolitan Houston Flood Risk Management-Resilience Project_Proposed Legislation:Water Resources Development Act_2018;Energy_Water Development Appropriations Act_2019; All US Flood Bills for Houston

by Agency: Houston "Residents Against Flooding"

Locations: TX

Date Submitted: 06/28/2018

Confirmation Number: f199e9be-c9bf-40cd-906d-f5f2ce314426

Supporting Documents

File Name	Date Uploaded
Letter for Basic Proposal on USACE Form 7001.pdf	06/28/2018
Map of 6 Texas Counties in the Greater Houston Area.pdf	06/28/2018
Cover Letter for Section 10 on USACE Form 7001- & Appendix A (PART 1).pdf	06/28/2018
Cover Letter for Section 10 on USACE Form 7001(Continuation)- Appendix B & Appendix C (PART 2).pdf	06/28/2018
Cover Letter for Section 10 on USACE Form 7001 (Continuation)- Appendix D, E, F, & G (PART 3).pdf	06/28/2018

2. Provide the name of the primary sponsor and all non-Federal interests that have contributed or are expected to contribute toward the non-Federal share of the proposed feasibility study or modification.

Sponsor	Letter of Support
Houston "Residents Against Flooding" (Primary)	Residents Against Flooding supports that US Congress shall assign USACE to do a Greater Houston Area urban watershed Drainage Improvement Study, appoint USACE as the 1 government Entity in charge of all related engineering construction Projects, & award USACE with 100% Funding in all Congressional Flood-Relief Bills for Houston, including H.R. 8-Water Resources Development Act of 2018, w_Corresponding Senate Bill same # as HR 8; H.R. 5895-Energy & Water Development Appropriations Act of 2019, w_Corresponding Senate Bills S2975,S3024,S3071; & HR 1892 for "Disaster Funding", w_Corresponding Senate Bills S870,S963,S1108,S1268,S1914,S2050, S2209,S2256,S2597. The proposed Study_Projects shall include USACE assessing all flooding causes in all Cities & 6 Counties in Greater Houston Area;(City of Houston alone encompasses 1300 Square Miles of Jurisdiction, including City of Houston Extra-Territorial Jurisdictions); to evaluate all of Greater Houston Area's Building & Drainage Laws; to amend any such Laws, if faulty, to prevent_correct flooding; to make recommendations, & implement and_or construct all drainage-relief projects, & thus correct Greater Houston Area's flooding problems. This Program, into the long term, will reduce flood risks for residents, businesses, & major corporations in Houston, as well as the Port of Houston & Petrochemical Industries in the Region, which is of national economic & safety interest, in that 25% of our Nation's gasoline & 40% of our jet fuel are produced here. Thus it is tantamount that Greater Houston's flood problems be surmounted for the sake of our National Security. The Program is truly a bipartisan interest that has broad support across the Constituents & Officials of this entire Region.

3. State if this proposal is for a feasibility study, a modification to an authorized USACE feasibility study or a modification to an authorized USACE project. If it is a proposal for a modification, provide the authorized water resources development feasibility study or project name.

[x] Feasibility Study

4. Clearly articulate the specific project purpose(s) of the proposed study or modification. Demonstrate that the proposal is related to USACE mission and authorities and specifically address why additional or new authorization is needed.

Residents Against Flooding supports a Greater Houston Area urban watershed drainage improvement Study & associated engineering construction Projects by USACE, who should be appointed as the 1 governing Entity in charge of all Congressional flood-relief Bills for Houston, including H.R. 8-Water Resources Development Act of 2018, with corresponding Senate Bill same # as H.R. 8; H.R. 5895-Energy & Water Development Appropriations Act of 2019, with corresponding Senate Bills S2975, S3024, S3071; & H.R. 1892 for “Disaster Funding”, with corresponding Senate Bills S870, S963, S1108, S1268, S1914, S2050, S2209, S2256, S2597. The proposed Study Projects shall include USACE assessing all flooding causes in all Cities & 6 Counties in the Greater Houston Area;(City of Houston alone encompasses 1300 Square Miles of Jurisdiction, including City of Houston Extra-Territorial Jurisdictions); to re-evaluate all of Greater Houston Area’s Building & Drainage Laws; to amend any such Laws, if faulty, to prevent correct flooding; to make recommendations, & implement and/or construct all drainage-relief projects, & thus correct Greater Houston Area’s flooding problems. This Program, into the long term, will reduce flood risks for residents, businesses, & major corporations in Houston, as well as Port of Houston & Petrochemical Industries in the region, which is of national economic & security interest, in that 25% of our Nation’s gasoline & 40% of our Nation’s jet fuel are produced here. Thus it is tantamount Greater Houston’s flood problems be corrected for our Nation’s safety. The Program is a truly bipartisan interest that has broad support across the Constituents & Officials of this entire Region.

5. To the extent practicable, provide an estimate of the total cost, and the Federal and non-Federal share of those costs, of the proposed study and, separately, an estimate of the cost of construction or modification.

	Federal	Non-Federal	Total
Study	\$20,000,000	\$0	\$20,000,000
Construction	\$10,000,000,000	\$0	\$10,000,000,000

Explanation (if necessary)

This Proposal is for a Feasibility Study & newly-authorized USACE Water Resources Development Projects, once Study is completed. This Proposal will work in synergy with existing authorized Buffalo Bayou & Tributaries Flood Risk Management Project, which includes Addicks & Barker Reservoir Dams & Metropolitan Houston Flood Risk Management Bayou Network. The specific Proposal_Project(s) of Proposed Study & Modification would be Flood Risk Management. This includes but not limited to appropriations in US Congress Bills: H.R. 8, 5895, 1892 & Sen.Bills 2975, 3024, 3071

1. Water Resources Development Act Proposal: Section XXX Metropolitan Houston:

a. Flood Risk Reduction & Resilience- The Secretary shall determine the feasibility of & proceed with engineering, design, & construction of projects to provide for flood risk management & resilience improvements to rainfall drainage systems in Harris, Montgomery, Waller, Fort Bend, Galveston, & Brazoria Counties, TX.

b. Funding- There is authorized to be appropriated \$10,000,000,000 for initiation & partial accomplishment of projects described in reports referred to in above subsection "a".

c. Obligations- No funds may be obligated in excess of amount authorized by subsection "b" for the projects for flood risk reduction & resilience improvements to rainfall drainage systems authorized by subsection "a" until USACE determines the feasibility of the work to be carried out with such funds is technically sound, environmentally acceptable, & economical.

2. Energy & Water Development Appropriations Act Proposal: SEC.YYY- Using \$20,000,000 of the funds appropriated herein, the Secretary of USACE, is authorized and directed to proceed with a feasibility Study, engineering, design, and construction of projects to provide for flood risk management & resilience improvements in the above 6 Counties per Sec XXX above. \$1Billion is authorized for appropriation for the initiation & partial accomplishment of projects in this Report.

6. To the extent practicable, describe the anticipated monetary and nonmonetary benefits of the proposal including benefits to the protection of human life and property; improvement to transportation; the national economy; the environment; or the national security interests of the United States.

Once these Projects are completed by USACE, there will be an estimated \$1,000,000,000,000 of benefits provided to the Greater Houston Area over a 50-year project life cycle. The protection of human life is inestimable, but there will also be enormous gain with improvement to quality of life & the environment, as well as vast increase of real estate property values; exponential economic growth in all business sectors, including the Port of Houston, especially with recent Panama Canal expansion, combining East-West worldwide trade; the huge megaplex of all Area Petrochemical Refineries, with Houston being the Energy (oil_gas) Capital in the U.S.; Transportation Industries (shipping, trucking, railway, & airway); Houston Medical Center, NASA, and countless satellite adjunct-businesses in the Greater Houston Area. Most of all, as Houston produces 25% of all the Nation's gasoline and 40% of all the Nation's jet fuel, it is imperative from a National Security standpoint that Houston's flood problems be addressed & fixed ASAP. USACE is widely known as The Flood Experts, & should therefore be placed in charge of assessing and repairing, via their engineering & construction expertise, all the flooding problems in the Greater Houston Area, & should be awarded 100% federal funding with all Bills legislated in US Congress for Houston's Flood Relief, quickly as possible. The flood problems in Houston have reached epic proportions due to many different local jurisdictions whose laws for building drainage often conflict & contain discrepancies, & allow flawed engineering studies, causing costly construction errors. For these reasons, besides that many watersheds overlap in 6 various Counties in the Region, it is essential, therefore, that only 1 governing entity, USACE, Galveston, be placed in charge to coordinate, evaluate, oversee, and manage all the engineering & construction Studies/Projects for proper & adequate repair of all flooding problems in Greater Houston Area.

7. Does local support exist? If 'Yes', describe the local support for the proposal.

Yes

Local Support Description

Houston "Residents Against Flooding" fully supports & is advocating for USACE to be placed in charge of all feasibility studies, and engineering & construction reparations needed to fix all Greater Houston Area's flood problems, which have caused loss of human life, as well astronomical destruction to homes, businesses, & economy in the Region. We the People, Residents Against Flooding (RAF), believe that USACE, widely-recognized as The Flood Experts, should be appointed as the 1 governing entity to correct all the flooding problems in Houston, & be awarded as the recipient of all US Congressional Bills with appropriations for Houston's flooding, & that such be allocated with 100% federal funding for all Flood Relief projects in the Greater Houston Area. Residents Against Flooding, being only a 501c3 Non-Profit, unfortunately does not have the Resources to contribute financially to Programs with the scope of such magnitude. Our grassroots organization was formed in YR 2009, primarily by homeowners who suddenly became flood-victims due to man-made flooding, and has since advocated strongly for flood-prevention, receiving great publicity for our endeavors. RAF has closely followed all flooding problems in the Houston area & been actively engaged in attempting to fight against all causes of flooding here. We have continuously reached out to all levels of government, as well as numerous area civic and neighborhood organizations, pushing for real Flood Remediation, but to no avail. Our only hope is that USACE will be placed quickly in charge of surmounting all the flooding problems in the Greater Houston Area by overseeing & managing all federal funding appropriated & allocated for Houston's Flood Relief, as Flooding in this Greater Area has now reached top-level priority as being a matter of utmost urgent concern for our Country's economic well-being & National Security.

8. Does the primary sponsor named in (2.) above have the financial ability to provide for the required cost share?

No

Primary Sponsor Letter of Support

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Letter for Basic Proposal on USACE Form 7001.pdf

Letter to U.S. Army Corps of Engineers, to US Army Corps of Engineers- Galveston District Office, and to the Assistant Secretary of the U.S. Army of Civil Works Office:

Please find enclosed Residents Against Flooding Basic Proposal for Section 4 of USACE FORM 7001:

"Residents Against Flooding" supports authorization of and appropriations to USACE, Galveston District, for their Metropolitan Houston urban watershed drainage improvement Study, as well as Proposal for its associated Engineering and Construction Projects. We look forward to working with the USACE, Galveston District, on this Program to solve the flooding problems in the Greater Houston Area.

Realization of this Program will make the City more resilient against flooding, which will make residents, businesses, major corporations located in Houston, as well as the Port and Petrochemical Industries in the Region, more sustainable into the long term. Beyond the Region, this is a national economic and security interest, in that 25% of the Nation's gasoline and 40% of its jet fuel are produced in the Houston area. Thus, it is tantamount & urgent that Greater Houston's flood problems be corrected quickly for our Nation's safety. Reducing flood risks and providing associated resiliency through this Program, if authorized and appropriated, is a truly bipartisan interest that has broad support across the Constituents and Officials of the Region. We look forward to the actions necessary to make this happen by appointing USACE, Galveston, as the 1 governing Entity in charge of all Flood Relief Bills for Houston:

To wit, these above-mentioned Bills, and any other Bills pertaining to Greater Houston's Flood Relief, shall include [H.R. 8-- the Water Resources Development Act of 2018, H.R. 5895-- Energy and Water Development Appropriations Act of 2019, & HR 1892](#) which is for "Disaster Funding", and [Senate Bill 2975, S3024, and S 3071](#).

For [HR 5895](#)- corresponding [Senate Bills are S2975, S3024, S3071](#).

For [HR 8](#), there is no corresponding Senate Bill #. Senate may pass HR Bill 8 thru, unchanged,

For [HR 1892](#), corresponding [Senate Bills are S870, S963, S1108, S1268, S1914, S2050, S2209, S2256, S2597](#).

The Project purpose of the proposed Study is to assess the causes of flooding in all the Cities & in all 6 Counties in the Greater Houston area; (City of Houston alone encompasses approximately 1300 Square Miles of Jurisdiction, including City of Houston Extra-Territorial Jurisdictions-ETJ's); to re-evaluate all of Greater Houston Area's Building & Drainage Laws; to amend any such Laws, if faulty, to correct/prevent flooding; to make recommendations, & implement and/or construct all drainage-relief projects, & thus correct Greater Houston Area's flooding problems.

USACE can provide the best expertise in overseeing such projects, given its historic longevity of correcting flood problems in the past and of constructing necessary fortifications that alleviate or stop flooding in areas where people live and work. The City of Houston has especially been plagued recently by repeat man-made flooding in the past decade, often due to City of Houston's faulty engineering & building requirements. USACE should be appointed as the 1 Government Entity to take charge, as soon as possible, over Greater Houston Area's flooding problems which have reached epic proportions, due to rampant building with massive amounts of cement, but without proper drainage, particularly since March 2013 when Houston City Planning & Development Dept rewrote, as lobbied for by private developers & builders, and passed by City Council Vote, a big change into the City's Building Code Chapter 42, to increase by four (4) times the amount of building (cement) allowed on each (1) Acre of ground, while Houston's Public Works & Engineering Dept, which arbitrarily governs City drainage/ detention pond laws, (politically-driven by & favoring private developers who do not want to detain their own Rain Run-Off, i.e., pay for detention ponds on their own Sites), did nothing to increase the commensurate amount of drainage & detention pond requirements, concomitantly. But with so much cement now replacing groundswell, and without enough mitigation being provided through proper or adequate drainage & detention ponds, as a result, excessive flooding has occurred in homes, businesses, and streets during heavy rain storms in the Houston Area. Neither underground drain pipes, creeks, ditches, bayous, dams, nor reservoirs, now overflowing beyond capacity, can handle this tremendous increase of cement replacing ground, displacing Rain Run-Off which has no place to go or empty into, & Harris County (which covers most of City of Houston) does not have jurisdiction or authority to override City of Houston Building & Drainage Laws; Harris County dictates only what City is allowed to dump into their (County's) waterways; hence, confusion exists as no one is in charge, so that engineering & construction are at loggerheads~ hence, flooding abounds. Other Cities & Counties in Greater Houston Area also have their own building & drainage laws, which also are not in sync. Moreover, the several watersheds in Greater Houston Area overlap in these Counties. TX DOT is yet another jurisdiction with its own set of drainage rules. These are additional reasons as to why 1 government Entity, USACE, which is unbiased, non-partisan, & scientifically-driven, should be appointed and placed in charge, & should be awarded all federal funding in all Congressional Bills, which should be appropriated with 100% federal expense, to fix all flood problems in the Greater Houston Area, which encompasses 6 surrounding Counties. Further, appointing USACE as the 1 Government Entity in charge of fixing the Greater Houston Area's flooding will also resolve the most critical matter of utmost urgency: sustaining our Nation's defense and economic security.

***Section 10 has 3 PDF Uploads for further explanation & Appendices with Engineering Studies/Documentation supporting this Basic Proposal.**

Further, **in Cover Letter for Section 10 PDF Uploads**, please click these hyperlinks that correspond to same links merely typed on this Letter:

In Paragraph 2 of Cover Letter, please see the sentence contained therein: "Please see **Appendix B** below for the Engineering Study on the too-small Briar Branch Detention Basin, with no mechanical pumps, besides other flaws. Also refer to <http://www.houstontirz17.org/files/4713/9965/2113/W14020Impact20Analysis.pdf> for detailed engineering study, and <http://www.houstontirz17.org/files/8113/9965/1788/Feb20201220Board20Meeting20RDS20and20W14020Basin20Final.pdf>."

Below Paragraph 5 of Cover Letter (just above Appendix A), please see the NOTE contained therein: "**NOTE:** IF further engineering studies, and explanation thereof, are needed to support the basic thesis, ideas, or statements in this Letter, please call Cell 713-775-2443 or email loisdmyers@gmail.com. See 4 minute Video where Lois Myers speaks at City of Houston City Council 6/18/2018: <http://houstontx.swagit.com/play/06182018-1776>. Move bottom cursor of TV Screen to 44 Min, 50 Sec (ends 48 Min, 32 Sec) to witness in live-action the discrepancy of City & County flood rules & authority~ hence the need for 1 independent, unbiased government entity, USACE, to be placed in charge of overseeing/managing Greater Houston Area's flood problems. Thank you."

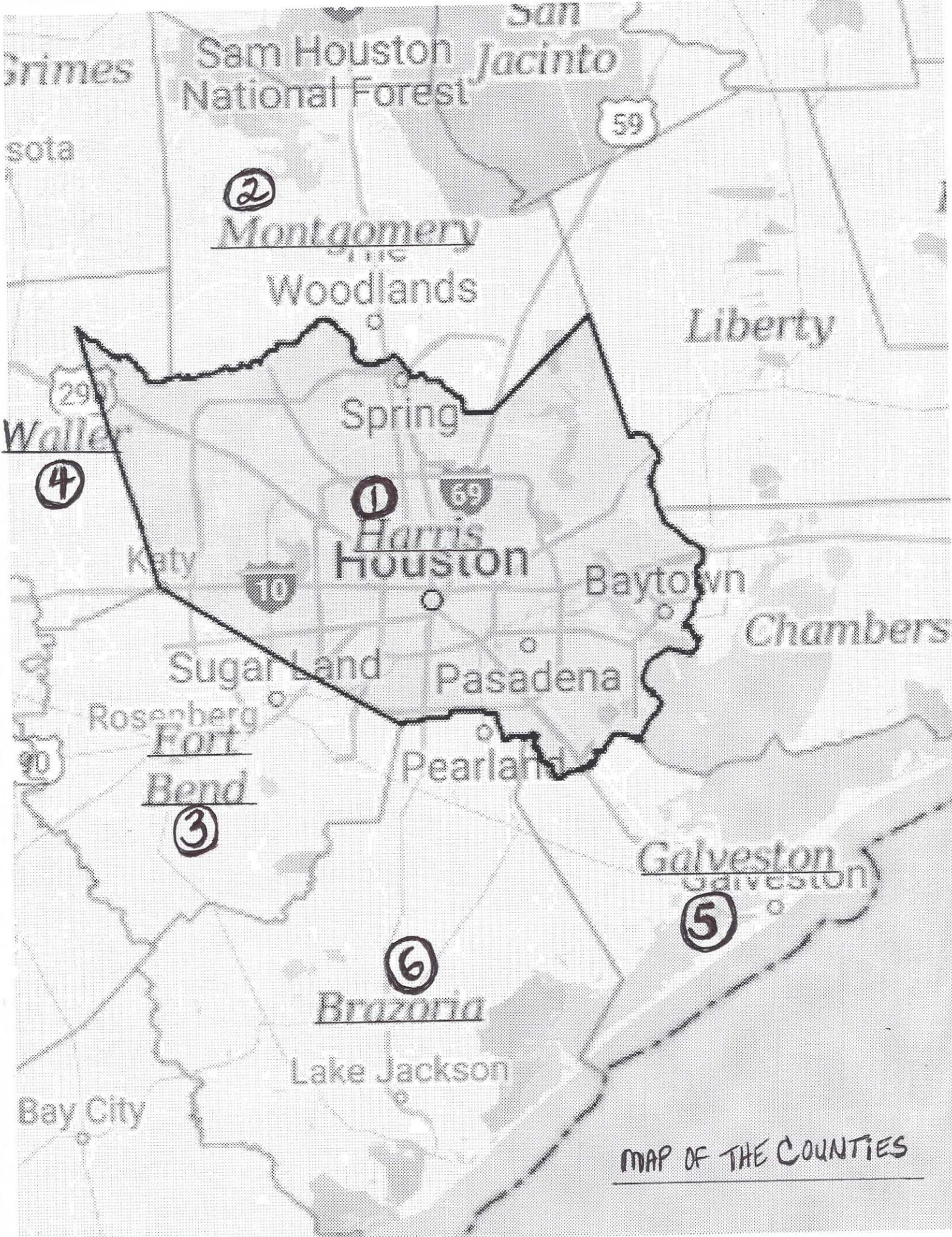
In APPENDIX B of Cover Letter, please see Heading: "Briar Branch Detention Basin or Pond Study, causing Flooding:" <http://www.houstontirz17.org/files/8113/9965/1788/Feb20201220Board20Meeting20RDS20and20W14020Basin20Final.pdf>. This Pond is otherwise known on the Houston TIRZ 17 Website as the "W140 Detention Basin".

In APPENDIX E of Cover Letter, please see Heading: "Questionable Study: Memorial Drive Project @ Q Beltway 8; No Detention Pond here: "A few pps of [Preliminary Engineering Report](#)(See for all pps 70-90) re. underground pipe connection: WBeltway8 to Memorial Dr (but [Detailed Eng.Drawings not available to Public](#))."

Map Document

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Map of 6 Texas Counties in the Greater Houston Area.pdf



②

Montgomery

Woodlands

Spring

①

Harris
Houston

Baytown

Sugar Land

Pasadena

Pearland

Fort

Bend

③

Galveston
Galveston

⑤

⑥

Brazoria

Lake Jackson

Bay City

MAP OF THE COUNTIES

Additional Proposal Information

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**Cover Letter for Section 10 on USACE Form 7001- & Appendix
A (PART 1).pdf**

SECTION # 10 on VSACE Form 7001

P.1

COVER LETTER + Appendix A, B, C, D, E, F, & G

Greater Houston's Flooding Problem has reached epic & epidemic proportions, due to engineering & construction drainage errors, as well as inconsistencies and discrepancies in the various local governments' faulty drainage/detention pond & building laws, often politically-driven, such as those governed by the City of Houston whose jurisdiction encompasses approximately 1300 Square Miles, including its several ETJ's (Extra-Territorial Jurisdictions), besides other jurisdictions in Greater Houston Area. Not only are many of City of Houston laws not in sync with Harris County Flood Control District standards~ and neither of these authorities has control over the other, so that many drainage problems are not resolved~ but multiple other Counties in the Greater Houston Area have their own sets of regulations for drainage, whereas, unfortunately hundreds of watersheds in widespread Greater Houston overlap these Counties, making control over flood prevention even more difficult here.

Therefore, all the above factors collectively make it imperative that ONLY 1 independent Government entity be placed in charge to evaluate, manage, and oversee the Greater Houston Area, with regard to all Congressional Bills awarded to fix the flooding problems in this entire region.

Moreover, many engineering studies conducted for new redevelopment in various places in this vast region have not been done accurately; yet these flawed studies have been used as the basis for commercial development and construction. Another problem is massive cement building, replacing groundswell, but without detention ponds or if any are of inadequate size/configuration, thus causing man-made flooding in the Area.

To wit, City of Houston's (COH) City Planning & Development Department proposed a huge building change to the City Building Code, Chapter 42~ which was lobbied for by private commercial developers & builders, and passed through City Council by a Vote in March 2013~ to increase by FOUR (4) Times the amount of cement building allowed on each (1) Acre of Ground, and YET at the same time, COH Public Works & Engineering Department (which arbitrarily decides the City's Drainage & Detention Pond Laws~ Voting by We the People is not allowed)~ sat silent and did NOT increase any drainage requirements, concomitantly & commensurately, to handle the Rain Run-Off that would result from such a massive increase of cement on the ground. This was a Recipe for Disaster. After this new Ordinance was passed, Developers & Builders went hog-wild, building on every inch of ground they could find in the 1300 Square Miles of COH's Building & Drainage Jurisdiction alone. As an example, instead of 7 homes on 1 Acre, now 28 homes could be built on the Acre~ and yet PWE said nothing about the resulting Rain Run-off created by such massive increase of cement poured on the sprawling, flat terrain in the Greater Houston Area~ such water has no place to go except into homes & streets~ and dams, built in the 1940's, were never designed to detain or hold this much

displaced rainwater, allowed by local authorities. Consequently, in less than 2 years after March 2013, Houston started having historic floods every year.

Because local governance in building & drainage has gotten out of control by allowing such recklessness & negligence, causing homes, which never experienced flooding before new commercial development encroached~ yet are now repeatedly being flooded in heavy rainstorms due to faulty building/drainage laws allowing massive new cement on the ground, and flawed engineering studies~ and because Houston's flooding encompasses 6 Area Counties where multiple watersheds overlap in these Counties, each of which has its own building/drainage laws that are not in sync with each other, yet no one is in charge ("too many Chiefs, not enough Indians"), I and many other flood-victim residents, believe, and thus request, that US Army Corps of Engineers, Galveston District~ which is scientifically-driven without political bias~ be placed in charge of all federal and Congressional funding to study, evaluate, oversee, and manage all engineering & reconstruction, to fix the flooding problems in the Greater Houston Area. USACE, Galveston, should be awarded 100% all federal funding for engineering studies, infrastructure design, flood reparations, and construction, to include authorization & appropriations for a Metropolitan Greater Houston urban watershed drainage improvement Study & all associated engineering/construction Projects.

USACE is widely-recognized as being THE Flood Expert; when disasters occur in the world, USACE is deployed to design & construct, to make things whole again. There is no place in more dire need of USACE, to fix flooding problems, than in the Greater Houston area which is the Energy Capital of our Nation. Ensuring Houston's safety & stability is of vital significance from both an economic as well as "national security" standpoint, as 25% of gasoline and 40% of jet fuel in the US is produced in Houston. What would U.S. do if Houston flooded when/if we were at war? Therefore, it is critical that USACE, Galveston, be appointed as the Number 1 Entity to be in charge of fixing Houston's flood problems.

Realization of such Program will make the Greater Houston Area more resilient against flooding, which will make residents, businesses, major corporations located in Houston, as well as the Port of Houston & Petrochemical Industries in the Region, more sustainable into the long term.

Reducing flood risks and providing associated resiliency through these Programs, if authorized and appropriated, is a bipartisan interest that has broad support across Constituents and Officials of the region. We look forward to the actions necessary to make this happen.

If any questions, please call 713-775-2443 to contact Lois Dickson Myers, a Houston resident who, like 1000+ others in her neighborhood suddenly experiencing Greater Houston's flood

problems, became a 3-Time Houston Flood-Victim in past 10 years in a home owned 40 years~ not in any floodplain & never flooded prior to local government jurisdictions' permitting of poor engineering & reconstruction in the area.

Below is a list of flawed engineering studies & faulty construction projects in the City/TIRZ 17, as exemplary of such errors in many other areas in Houston, evincing the need for USACE to be appointed as the 1 Entity in charge of correcting all the flood problems in Greater Houston Area:

1. **Brickhouse Gully Project**- Houston Residents believe a flawed engineering study was done for Metro National, a Developer who wants to build 800-900 new homes + 35 Acres of future commercial buildings on its former Pine Crest Golf Course, 3080 Gessner; Houston, TX 77080. This Project, adjacent to & flowing into Brickhouse Gully, the 8th lowest gully in all of Texas, with a very fast flow-rate, creating even greater flooding, will flow into White Oak Bayou. Thousands of older homes along this Gully & Bayou have already flooded. Please see Report below, showing flaws in this recent Brickhouse Eng. Study which allowed such new construction to be permitted, without Developer providing enough and/or proper mitigation to prevent additional flooding in surrounding areas. Hopefully, USACE, Galveston, will review this Engineering Study as residents believe it contains gross errors~ especially since the Study claims, but does not explain how, 70% of the water in Brickhouse Gully located north of Pine Crest Golf Course, miraculously jumps out of its bed, @ Clay & Gessner Rds, then travels south on Gessner a few hundred feet, then suddenly makes a 90-degree turn to east, veering across the Golf Course, in a make-believe channel that does not exist in real life, but only in the hypothetical engineering model simulating this. The Eng. Study purports this, so as to lower the base-flood-elevation here, putting the channel in the Floodway, thus manipulating facts & figures, construing that the remainder of the Land is in a 500 Yr Floodplain, so that it can be built upon. It will require a highly-skilled Engineer, such as USACE, to decipher that the math equations and numbers just don't add up here & something is amiss~ which will create massive flooding in an already-flooded area, which will only cause extra expense & heartache with even more homes being flooded. Please see **Appendix A** below that contains several pages of documentation, pointing out the flaws of the Developer's Engineering Study that permitted this Project, which has already commenced with City/County approval, unfortunately. Thus, USACE, the Flood Experts, should be placed in charge as the 1 Governing Entity to assess, evaluate, manage, & oversee all flooding problems in Greater Houston Area.

2. City of Houston/TIRZ 17, a quasi-local government entity established in 1999 to Improve Drainage & Mobility in the area (but it has only gotten worse), due to its new commercial reconstruction, poorly built the too-small **Briar Branch Detention Basin** for its Rain Run-Off in 2012, as a City/Private-Developer Project, with Harris County Flood Control District having some jurisdiction over it, in that County has historically controlled Briar Branch Creek, into which ½ the entire Hammerly Watershed empties, which then empties into this Basin, located just east of Bunker Hill Rd & just north of Interstate-10W in Houston, TX 77055. The County recently relinquished its authority over this Creek to the City of Houston, yet the County still regulates how much water may be put into the Creek when it continues east just beyond this Basin, so that the matter of enlarging this Basin is at loggerheads~ it is a "no-man's land" situation where neither the City nor the County is in control~ hence, proper mitigation is not being provided to the surrounding residential neighborhoods which have already been flooded by TIRZ 17's commercial development begun here in 2009. When residents recently requested TIRZ 17 to enlarge the Basin, they were given a variety of excuses as to why this could not be done, such as Harris Co did not have a mower to cut the grass in it, if deepened; then attempted to say the Water Table was beneath it, so could not deepen to enlarge, which turned out not to be so; the last excuse being that mechanical pumps would have to be installed~ for which City/Developers do not want to pay, but such would provide more capacity in the Basin. Developers fight having to pay for detention ponds or basins, per se, to make more profit for themselves. Please see **Appendix B** below for the Engineering Study on the too-small Briar Branch Detention Basin, with no mechanical pumps, besides other flaws. Also refer to <http://www.houstontirz17.org/files/4713/9965/2113/W14020Impact20Analysis.pdf> for detailed engineering study, and <http://www.houstontirz17.org/files/8113/9965/1788/Feb20201220Board20Meeting20ORDS20and20W14020Basin20Final.pdf>.

But the Basin is woefully inadequate & too small to detain the tremendous amount of Rain Run-Off displaced by City's poor redesign of Bunker Hill Road (just to the West), whose Rain Run-Off flows into this Basin, plus Rain Run-Off from Metro National's new redevelopment in NW Quadrant of IH-10W & Gessner Road (2 short blocks to the West), in addition to half the amount of City of Houston's major drainpipe W-151 flowing from the northward Hammerly Watershed, flowing into this Basin. Moreover, a pipe on south side of Briar Branch Basin first brings in Rain Run-Off displaced by commercial buildings on N. Feeder of IH-10W. The point is, thus Pond is poorly designed & constructed, besides being too-small, as proven by its subsequent flooding of homes just north of the Basin after it was built: Floods of May 2015, April 2016, Hurricane Harvey 2017~ & many close calls in between.

FURTHER, Harris County Flood Control District has not approved of City's Plans North of I-10 for this vicinity, so that City & County are at loggerhead, meanwhile residents wait on tenterhooks, fearing they will be deluged again in the next big rainstorm! Hence, 1 Government Entity, as USACE, should be appointed in charge of resolving all flooding problems in the Greater Houston Area.

3. **Also**, flawed engineering/reconstruction was done by City/TIRZ 17 Developers, 2009, on **Bridge on Bunker Hill Rd** (N of I-10 W) going over Briar Branch Creek, slightly West of Briar Branch Detention Basin~ thus causing flooding in surrounding neighborhoods that never occurred before. Please see below **Appendix C (or request PDF for enlargement)** for this flawed Engineering Study, by Aecon Engineering, subcontracted by TIRZ 17 Engineer, LAN (Lockwood, Andrews, Newnam), with City of Houston & Harris County approval. It undersized by 3 Times amount of water actually flowing beneath the Bridge~ hence, due to flawed study & reconstruction, it now acts as a dam on west side, causing severe flooding in heavy storms. TIRZ 17 admits to errors in this Study & agrees to making amends, but after almost 10 years, no reparation has occurred; moreover, such a gross engineering mistake should never have occurred in the first place. The original design cut corners on drainage to save City/Developer from having to pay enough money to construct the Bridge properly. This Bridge used to be high up on piers, allowing free-flow of rainwater to gush to Sea, but City mashed it down with 2 small cement openings, restricting the flow, so it acts now as a dam, flooding houses.
4. **Also**, City/TIRZ 17 has massively increased recent amount of cement building on ground, one block to the west of Bunker Hill Rd, on Gessner Rd @ Interstate 10W, & having just widened Gessner from 4 lanes to 6 lanes; much of this Run-Off will be routed into Briar Branch Creek. Despite Harris Co Flood Control not approving any City/TIRZ 17 projects N. of I-10W in this vicinity, Developer Metro National continues building with massive cement in NW Quadrant of Interstate 10W/Gessner, based on an Engineering Study done on the too-small **Conrad Sauer Pond** in this Quadrant, purporting Developer would enlarge it, (which is dubious), thus will create even more Rain Run-Off, which is also to be funneled into Br.Branch Creek, & hence into Briar Branch Detention Basin, which also allows for commercial buildings next it to dump 2 to 3 Acre-Feet of their Rain Run-Off into it, but Residents believe an even greater amount from these buildings is actually being pumped into it. Hence, with the Briar Branch Detention Basin also being woefully inadequate, due to recent massive increase of cement building on ground in this area, and with a faulty Study done by Aecon Engineering (subcontracted by LAN Engineering for City/TIRZ 17) to reconstruct

the Bunker Hill Bridge in 2009, this whole area is now being flooded by improper City/County engineering & hence reconstruction, i.e., poor flood management. Unless We Residents had investigated these matters & found out why we are suddenly being flooded, these faulty Projects would never have gotten attention. But THIS is the type of negligent engineering & construction likely causing flooding all over Houston, creating "pockets of localized flooding". This is only one example of hundreds showing exactly why USACE needs to be awarded by US Congress as the overseer of all Congressional flood-funding & put in charge as the 1 governmental Entity to manage & correct all Greater Houston Area's flooding problems. Please see **Appendix D** below for Engineering Study on too-small Conrad Sauer Detention Pond, which was originally built 19 years ago for Rain Runoff of only a small subdivision North of it~ But in 2015 Developer Metro National seized control of the Pond for its own Rain Run-Off coming from its commercial building in NW Quadrant I-10W/Gessner Rd, with City approval. But while County Flood Control has no jurisdiction over City Conrad Sauer Detention Pond, yet does not approve of any City/TIRZ 17 Projects N. of I-10W/Gessner, saying they are displacing too much Rain Run-Off, at too fast a Flow-Rate, which City later discharges further downstream into their (County's) waterways over which has control, nothing is resolved, so it is a standoff & Residents are left at peril of flooding. This is exemplary of City/County being at loggerheads with no one in control, hence why USACE should be put in charge of managing/correcting Greater Houston Flooding.

5. City/TIRZ 17 **Memorial Drive Project at West Beltway 8 in Houston, TX 77024, just north of Buffalo Bayou.** The Engineering Study (See **Appendix E** below), done by LAN for this Project, is questionable for a number of reasons. This area encompasses TIRZ 17's Developer of Town & Country and City Centre Malls, part of which are located in the "Attingham Basin" area, in SE Quadrant of I-10W & W. Beltway 8, which has recently added a massive amount of cement on the ground, but with no detention ponds or of adequate size to detain their commercial buildings' Rain Runoff. So TIRZ 17 Developer's engineer, LAN, has devised a plan to circumvent the Developer's requirement to put in a detention pond for its own Rain Runoff. They plan to construct a large pipe with a large box culvert for temporary storage, under a road in T & C Mall, for their Rain Runoff to then be routed northward & dumped into the I-10 system of TX DOT's Feeder Road drainpipe, which goes west for a short distance, then turns south into the east side of W Beltway 8 drainpipe, i.e., HCTRA's (Harris Toll Rd Authority) or TX DOT's drainpipe traveling southward, to tie into City/TIRZ 17's new drainpipes soon to be installed under either Memorial Drive or will go straight into Buffalo Bayou, which is already maxed out and County will not allow any more water to be dumped into it. But there is *public suspicion*, due to LAN's letter to TIRZ 17

stating such (also in **Appendix E**), that LAN intends to re-direct the huge HCTRA (Harris County Toll Rd Authority) underground pipe and/or TX DOT pipe, which also goes from I-10W under the E Feeder of W Beltway 8 to Buffalo Bayou, to re-route them underneath Memorial Drive, to go all the way eastward to W-153 Watershed & possibly further to Gessner Rd, *thus will flood out hundreds of even more homes in the Memorial Area of Houston!* (See another City letter in **Appendix E**, stating this Project may affect possible flooding in the "outfall" or downstream, but that such was beyond the scope of this Study, implying City/TIRZ 17 developers are not responsible if this happens!) *We Residents cannot obtain true detailed engineering studies for the underground pipes to be put under Memorial Drive @ W Beltway 8, slightly north of Buffalo Bayou, where homes in this area were massively flooded during Hurricane Harvey, but are shown only vague engineering sketches/drawings (in **Appendix E**).* Some of these homes had already flooded prior to Harvey, due to improper Drainage caused by City/TIRZ 17 developers of Town & Country & City Centre who were/are commercially redeveloping the area, but without building any or adequate Detention Ponds, which were advised to be put in by Walter P. Moore Engineering Study in 2002/03, which stated City Drainage Standards were "out of date". Thus a Contract was signed in 2003 by City & TIRZ 17 to put in 4 Ponds in TIRZ 17's entire area (N & S of I-10W), based on Moore's Study; however, in hindsight, the Contract was just a political ploy, to appease Public distrust of TIRZ 17, as Contract became buried in paperwork, but was later discovered via Open Records Request in 2009 by a Resident in the area. Yet, to-date, City/TIRZ 17 has not put in even 1 Pond in the locations specified per this Contract, one of which was to be in Attingham Basin~ See **Appendix F** below for this Contract. There was also an Engineering Study done on this area by Aecom Engineering Study in 2012, as requested by Harris County Flood Control; this Study recommended 2 additional Detention Ponds in 2 other specific locations in Memorial Drive/W Beltway 8 Area~ neither of which was put in, because City of Houston instead allowed 2 private Developers to build commercially in these 2 locations: "Ascension on the Bayou" & "Memorial Green"-- probably because City wanted Tax-Revenue more than flood-control. ~ Therefore, City of Houston & Harris County goals often conflict and are at odds~ See **Appendix G** below for this Study. **(NOTE: MOREOVER, Harris Co. approved City/TIRZ 17's "Memorial Drive Project" Eng. Study which included a Detention Pond that would supposedly be built in Attingham Basin under the land owned by Spring Branch Independent School District, where Spring Branch Memorial Sports Authority has a Memorandum Agreement with SBISD, to allow private baseball games to be played here. However, SBISD has not received engineering paperwork from City/TIRZ 17 regarding this Pond, so as to even make a decision on whether to allow SBISD land to be used for such detention~ which will**

take them at least a year and half to consider, and then a VOTE by the School Board allowing such is questionable also. Therefore, it is inconceivable the County approved this Project based on an Eng.Study which included a Detention Pond that may never exist.

NOTE: Residents are also concerned that City/County approved such Memorial Drive Project merely based on the fact that they slowed the flow-rate in newly-proposed larger-size drainpipes (10 by 10' box culverts), yet City/County are not taking into consideration the increased capacity or volume of water routed into these pipes as a determining factor on whether they should approve this Project should or not. Residents suspect that City/TIRZ 17 is re-routing HCTRA and/or TX DOT pipes under W Beltway 8, eastward under Memorial Drive to W-153 Watershed, already known to be stretched way beyond drainage limits; they fear hundreds of more homes will be awash in heavy rain storms if such Project proceeds as planned, unchecked.)

Again, all of these Studies & documents contained herein provide supporting evidence as to the discrepancy, engineering-inadequacy, and negligence in many varying building/drainage/detention pond laws, rules, practices, no doubt in each of the 6 Counties of the Area's local City/County jurisdictions~ and hence prove the utmost need for USACE, Galveston, to be appointed overseer 100% of all Congressional funding allocated to fix Greater Houston Area's Flood Problems, immediately. USACE is widely-recognized as a bipartisan, politically-independent, purely scientifically-driven, and unbiased governmental entity with superior capability, training, and impeccable track-record in engineering and construction for flood-assessment, prevention, and management. Getting Houston's flooding under control ASAP is tantamount and too serious a matter to be left any longer to the discretion of multiple local governing authorities often at political and drainage-standard odds; it has now become a matter of gargantuan import from both a national economic & security defense standpoint, as Houston is the Energy/ Oil-Gas Capital of our Nation, and can no longer be left subjected to risky flood management. USACE is the 1 government entity with proper credentials to be placed in charge of all federal Bills to fix Greater Houston's Area flooding.

NOTE: IF further engineering studies, and explanation thereof, are needed to support the basic thesis, ideas, or statements in this Letter, please call Cell 713-775-2443 or email loisdmyers@gmail.com. See 4 minute Video where Lois Myers speaks at City of Houston City Council 6/18/2018: <http://houstontx.swagit.com/play/06182018-1776>. Move bottom cursor of TV Screen to 44 Min, 50 Sec (ends 48 Min, 32 Sec) to witness in live-action the discrepancy of City & County flood rules & authority~ hence the need for 1 independent,

unbiased government entity, USACE, to be placed in charge of overseeing/managing Greater Houston Area's flood problems. Thank you.

APPENDIX A- Analysis of Flawed Brickhouse Gully Engineering Study, causing flooding

APPENDIX B- Briar Branch Detention Basin or Pond Study, causing flooding:

- A. Sketch #1- difficult to determine where Water Table is~ Pond needs to be deepened/enlarged, but City/Developers do not want to spend money on this; Pond also is in incorrect location: Contract of 2003 said City/TIRZ 17 Developers were to build two Ponds (1 above ground & 1 below ground) on Witte Rd~ 2 blocks to the West~ but political real estate reasons intervened, so this Pond was built in wrong place instead, to the East of Witte & Bunker Hill Rds~ Further, this incorrect Pond's location & configuration benefit commercial developers, NOT surrounding residential homeowners.**
- B. <http://www.houstontirz17.org/files/8113/9965/1788/Feb20201220Board20Meeting2ORDS20and20W14020Basin20Final.pdf>**

This Pond is otherwise known on the Houston TIRZ 17 Website as the "W140 Detention Basin". Residents have witnessed excess water pouring out of this Basin, going Northward, against the natural flow of rainwater, because it is too small, & commercial Rain Run-Off from North I-10 Feeder Rd (on South side of the Basin) and commercial buildings next to Basin fill it to capacity, before Hammerly Watershed flowing southward thru residential neighborhoods (N . of Basin) has a chance to get into the Basin.

APPENDIX C- Flawed Study of Bridge on Bunker Hill Rd (North of Interstate 10W) going over Briar Branch Creek, carrying out ½ entire Hammerly Watershed from the North, causing flooding. (Aecon Engineering, subcontracted by TIRZ 17 engineer LAN, lowered & undersized 3 TIMES the actual amount of water flowing under this Bridge, to cut corners, financially benefitting City/TIRZ 17 Developers~ hence, with faulty construction, Bridge now acts as a Dam on west side, causing massive flooding in surrounding residential Subdivisions.

APPENDIX D- Conrad Sauer Eng. Study (Detention Pond too small) for TIRZ 17 Developer's Massive New Cement Building in NW Quadrant of Interstate 10W/Gessner Rd., as well as widened expansion from 4-6 lanes of cement on Gessner Rd here. Residents fear even greater man-made flooding will occur than City/TIRZ 17 has already created in the area.

APPENDIX E- Questionable Study: Memorial Drive Project @ W Beltway8; No Detention Pond here. A few pps of Preliminary Engineering Report(See for all pps 70-90) re. underground

pipe connection: WBeltway8 to Memorial Dr (but Detailed Eng. Drawings not available to Public).

- A. LAN Engineer Letter to TIRZ 17, stating intention to route new Memorial Drive drainpipes eastward to Watershed W-153. Residents fear this will causing even more man-made flooding, caused by Commercial developers not putting in Detention Ponds.
- B. City of Houston PWE Letter stating W-153 is insufficient to handle additional Rain Run-off, yet City/TIRZ 17 Memorial Drive Project intends to route more rainwater into W-153, and also states Project will not improve the Drainage Problem in the area (See p. 3 of City Letter). On p. 5, Letter also states more regional study is required for Project, but said such is outside its scope, thus denying responsibility for causing downstream flooding.

APPENDIX F- Contract of 2003, signed by City of Houston & TIRZ 17 Developers, to build 4 Detention Ponds in specific places in TIRZ 17's territory, N & S of I-10, bounded by W Beltway 8 & Bunker Hill Rd~ as recommended by Walter P. Moore Eng. Study done for City/TIRZ 17, to prevent flooding, as Study stated City of Houston Drainage Standards are "antiquated"; Yet, to-date, not 1 of these Ponds has been built.

APPENDIX G- Engineering Study done by Aecom Engineering for Harris Co. Flood Control in 2012, recommending 2 Sites for Detention Ponds in TIRZ 17 area to prevent flooding, near Memorial Drive & W Beltway 8~ BUT INSTEAD, City of Houston allowed 2 Commercial Developments to be constructed on these Sites (for City tax-revenue), which have caused great man-made flooding. (NOTE: See 2 large X's on the 2 dark round spots on this Drawing, indicating where these 2 Detention Ponds were advised to be built; but instead two commercial developers put in 2 huge commercial enterprises with massive building of cement on the ground replacing groundswell & displacing massive amounts of Rain Run-Off into drainage system & into Buffalo Bayou, which is already maxed out. County Judge had told City 2 years ago not to dump any more water into Buffalo Bayou, in straight-shot manner, but City did not heed the warning~ hence, no one is in control to prevent flooding. This is another instance that is exemplary of the confusion, discrepancy of local drainage/building laws, and shows that US Congress needs to step in and appropriate all federal Bills with 100% funding for Houston's Flood-Relief Bills, and appoint USACE, the Flood Experts, to be the 1 governing entity in charge of assessing, overseeing, managing, & fixing all Greater Houston's flooding problems.

COVER LETTER- p. 11
(APPENDIX'S follow)

PLEASE NOTE: BECAUSE THE LINKS ENCLOSED IN THIS COVER LETTER ARE NOT HYPERLINKED (i.e., "Clickable"), Please See PDF Upload in Paragraph 2 herewith on this Form: "Basic Letter for Basic Proposal on USACE Form 7001", which provides the Hyperlinks that correspond to the same links that are merely typewritten on this Cover Letter:

"Further, in Cover Letter for Section 10 PDF Upload, please click these hyperlinks that correspond to same links merely typed on this Letter:

In Paragraph 2 of Cover Letter, please see the sentence contained therein: "Please see Appendix B below for the Engineering Study on the too-small Briar Branch Detention Basin, with no mechanical pumps, besides other flaws. Also refer to

<http://www.houstontirz17.org/files/4713/9965/2113/W14020Impact20Analysis.pdf> for detailed engineering study, and

<http://www.houstontirz17.org/files/8113/9965/1788/Feb20201220Board20Meeting20RDS20and20W14020Basin20Final.pdf>."

Below Paragraph 5 of Cover Letter (just above Appendix A), please see the NOTE contained therein: "NOTE: IF further engineering studies, and explanation thereof, are needed to support the basic thesis, ideas, or statements in this Letter, please call Cell 713-775-2443 or email loisdmyers@gmail.com. See 4 minute Video where Lois Myers speaks at City of Houston City Council 6/18/2018: <http://houstontx.swagit.com/play/06182018-1776>. Move bottom cursor of TV Screen to 44 Min, 50 Sec (ends 48 Min, 32 Sec) to witness in live-action the discrepancy of City & County flood rules & authority~ hence the need for 1 independent, unbiased government entity, USACE, to be placed in charge of overseeing/managing Greater Houston Area's flood problems. Thank you."

In APPENDIX B of Cover Letter, please see Heading: "Briar Branch Detention Basin or Pond Study, causing Flooding:"

<http://www.houstontirz17.org/files/8113/9965/1788/Feb20201220Board20Meeting20RDS20and20W14020Basin20Final.pdf>- This Pond is otherwise known on the Houston TIRZ 17 Website as the "W140 Detention Basin".

In APPENDIX E of Cover Letter, please see Heading: "Questionable Study: Memorial Drive Project @ Q Beltway 8; No Detention Pond here: "A few pps of Preliminary Engineering Report(See for all pps 70-90) re. underground pipe connection: WBeltway8 to Memorial Dr (but Detailed Eng.Drawings not available to Public)."

FLAWED "BRICKHOUSE GULLY" ENG. STUDY - APPENDIX A

(Approved by Harris Co. Flood Control, City of Houston, & FEMA)

P.1

Concerns About Changes To FEMA Flood Insurance Rate Map, FIRM, 48201C0635 For Brickhouse Gully And Golf Course Property

Brickhouse Gully and the golf course property have been in a mapped floodplain since 1985; the golf course was built between 1990 and 1992. The area was modeled and analyzed as part of the Tropical Storm Allison Recovery Project. That 2007 revision increased the zone AO depth from 1 foot to 2 feet.

Letter of Map Revision (LOMR) 15-06-0275P diverts 70 percent of the flow from Brickhouse Gully and claims it travels through the golf course creating a split floodway. Base Flood Elevations for Brickhouse Gully, directly north of the golf course, were lowered, by up to 2 feet, due to the drop in flow in the gully. This LOMR officially revised the Flood Insurance Rate Map for the area in 2015.

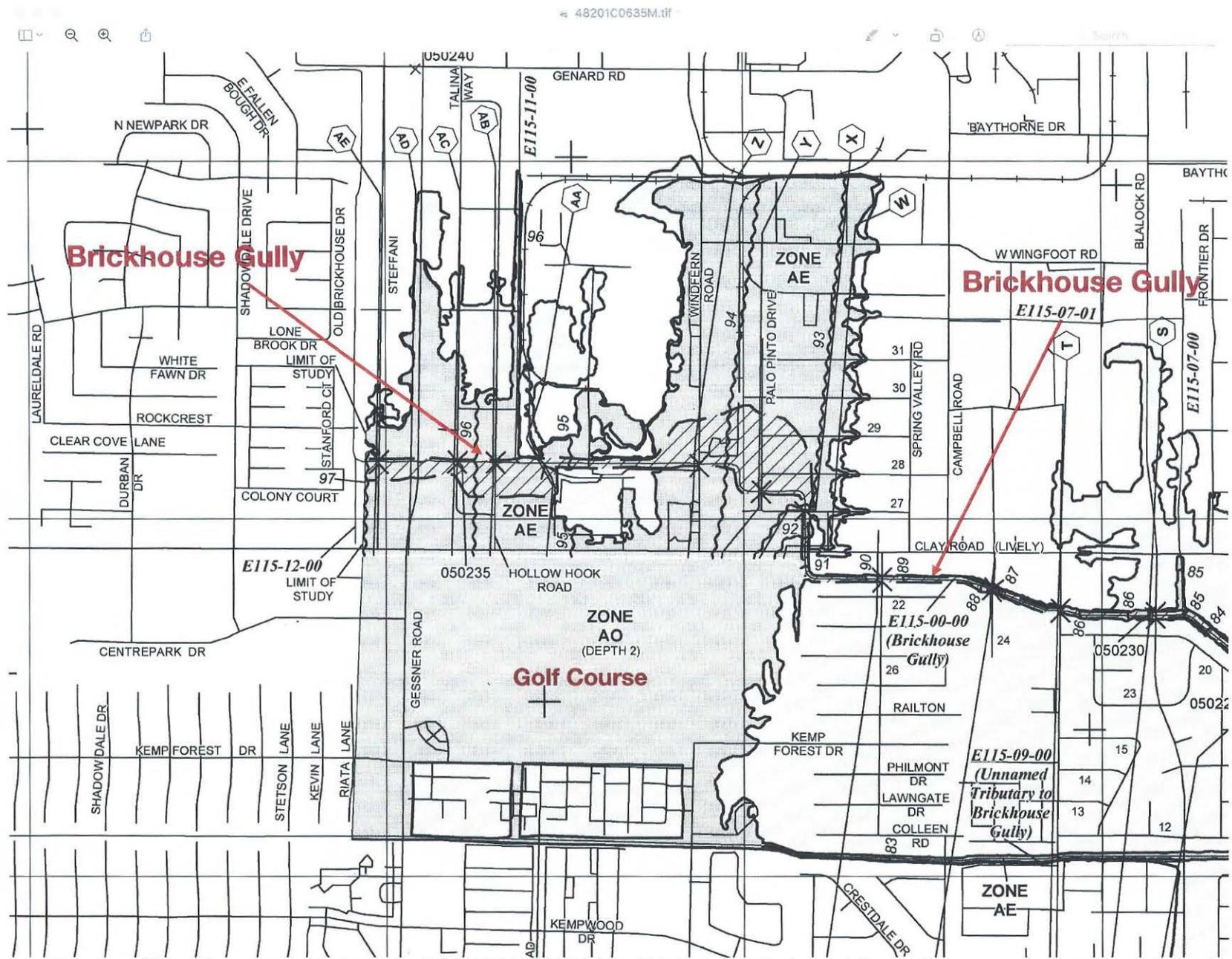
Why would the developer want to map a floodway on the property? Is this LOMR, using the lowered BFEs, just an interim step to getting the property removed from the floodplain?

Conditional Letter of Map Revision (CLOMR) 17-06-0297R was submitted 8 months after LOMR 15-06-0275P became effective. The CLOMR, using the lowered Base Flood Elevations from the LOMR, proposes a new channel to handle the overflow from Brickhouse Gully and results in all, excluding the new channel, of the golf course acreage being removed from the 100yr or 1 percent floodplain; no mitigation for fill required. Capacity of the new channel is estimated to be around 88 acre feet.

For what was previously mapped as 151 acres with a 2 ft. depth, lost detention may not be as simple as 151x2 but must be significantly more than 88 acre ft.

These changes can only adversely impact adjacent and downstream neighbors due to the loss of detention, no requirement to mitigate for fill, and new streets/storm sewers for the new development surely convey the water much faster than the old golf course.

NOTE: Both the LOMR and CLOMR were submitted by Jones&Carter on behalf of Metro National (the owner/developer).



Previous Flood Insurance Rate Map 48201C0635M 2014 - Brickhouse Gully and the golf course property have been in a mapped floodplain since 1985; the golf course was built between 1990 and 1992. The area was modeled and analyzed as part of the Tropical Storm Allison Recovery Project. That 2007 revision increased the zone AO depth from 1 foot to 2 feet.



Letter of Map Revision 15-06-0275P - Jones & Carter submitted, on behalf of MetroNational, the request for a map revision. The LOMR diverts 70 percent of the flow from Brickhouse Gully and claims it travels through the golf course creating a split floodway. Base Flood Elevations for Brickhouse Gully, directly north of the golf course, were lowered, by up to 2 feet, due to the drop in flow in the gully. This LOMR officially revised the Flood Insurance Rate Map for the area in 2015.



CLOMR 17-06-297R - The CLOMR was submitted 8 months after LOMR 15-06-0275P became effective. The CLOMR, using the lowered Base Flood Elevations from the LOMR, proposes a new channel to handle the overflow from Brickhouse Gully and results in all, excluding the new channel, of the golf course acreage being removed from the 100yr or 1 percent floodplain; no mitigation for fill required.

Attachment 2
 Brickhouse Gully LOMR
 Response to Local Review Comments
 Revised Steady Flow Data for Split Model

Flow through Golf Course			
10-Yr	50-Yr	100-Yr	500-Yr
490	680	850	1100

Revised Steady Flow Data (Compared to Effective Steady Flow Data)

Reach	RS	10-Yr (Split Model)	10-Yr (Effective Model)	50-Yr (Split Model)	50-Yr (Effective Model)	100-Yr (Split Model)	100-Yr (Effective Model)	500-Yr (Split Model)	500-Yr (Effective Model)
E115	32382.3	840	840	1000	1000	1100	1100	1150	1150
E115	31967	900	900	1080	1080	1200	1200	1280	1280
E115	31836	410	900	400	1080	350	1200	180	1280
E115	31683.4	410	900	400	1080	350	1200	180	1280
E115	31559.8	490	980	520	1200	500	1350	400	1500
E115	31210.3	510	1000	540	1220	520	1370	440	1540
E115	30772.2	580	1070	600	1280	600	1450	600	1700
E115	29360.2	620	1110	640	1320	650	1500	690	1790
E115	28586.7	650	1140	670	1350	680	1530	760	1860
E115	28025.6	710	1200	720	1400	750	1600	900	2000
E115	27466.2	710	1200	720	1400	750	1600	900	2000
E115	26924	1240	1240	1420	1420	1660	1660	2050	2050
E115	26206.4	1260	1260	1440	1440	1700	1700	2080	2080
E115	25073.7	1320	1320	1480	1480	1790	1790	2160	2160
E115	24695	1350	1350	1500	1500	1850	1850	2200	2200

LOMR Table showing drop in flow in Brickhouse Gully

Attachment 2
 Brickhouse Gully LOMR
 Response to Local Review Comments
 Revised Steady Flow Data for Split Model

Reach	RS	10-Yr (Split Model)	10-Yr (Effective Model)	50-Yr (Split Model)	50-Yr (Effective Model)	100-Yr (Split Model)	100-Yr (Effective Model)	500-Yr (Split Model)	500-Yr (Effective Model)
E115	23509.6	1950	1950	2600	2600	2900	2900	3800	3800
E115	20146.5	3230	3230	4690	4690	5430	5430	7540	7540
E115	18986.6	3327	3327	4847	4847	5616	5616	7768	7768
E115	18584.6	3380	3380	4860	4860	5600	5600	7770	7770
E115	17975.5	3630	3630	4920	4920	5520	5520	7750	7750
E115	15262	3810	3810	4960	4960	5460	5460	7740	7740
E115	13336.3	3970	3970	4990	4990	5420	5420	7730	7730
E115	11812.3	4130	4130	5030	5030	5370	5370	7720	7720
E115	10368.6	4250	4250	5050	5050	5340	5340	7710	7710
E115	9275.2	4254	4254	5052	5052	5340	5340	7714	7714
E115	8157.3	5270	5270	6510	6510	7060	7060	10120	10120
E115	6852.1	5350	5350	6610	6610	7180	7180	10270	10270
E115	6273.6	5530	5530	6840	6840	7470	7470	10660	10660
E115	4894.1	5650	5650	7000	7000	7660	7660	10920	10920
E115	4024.5	5780	5780	7160	7160	7870	7870	11190	11190
E115	3095.3	5920	5920	7350	7350	8100	8100	11500	11500
E115	2090.4	6230	6230	7743	7743	8598	8598	12166	12166
Golf Cours	4319.499	490	n/a	680	n/a	850	n/a	1100	n/a
Golf Cours	4152.239	490	n/a	680	n/a	850	n/a	1100	n/a
Golf Cours	3570.969	490	n/a	680	n/a	850	n/a	1100	n/a
Golf Cours	2966.023	490	n/a	680	n/a	850	n/a	1100	n/a

LOMR Table showing constant flow across Golf Course

Attachment 2
 Brickhouse Gully LOMR
 Response to Local Review Comments
 Revised Steady Flow Data for Split Model

Reach	RS	10-Yr (Split Model)	10-Yr (Effective Model)	50-Yr (Split Model)	50-Yr (Effective Model)	100-Yr (Split Model)	100-Yr (Effective Model)	500-Yr (Split Model)	500-Yr (Effective Model)
Golf Cours	1132.226	490	n/a	680	n/a	850	n/a	1100	n/a
Golf Cours	963.1334	490	n/a	680	n/a	850	n/a	1100	n/a
Golf Cours	675.0079	490	n/a	680	n/a	850	n/a	1100	n/a
Golf Cours	231.8512	490	n/a	680	n/a	850	n/a	1100	n/a

LOMR Table showing constant flow across Golf Course

Attachment 1
Brickhouse Gully LOMR
Response to Local Review Comments
100-Year HEC-RAS Model Comparison (Revised)

River Station	Q (cfs) Steady	Q (cfs) Unsteady	1	2	2 - 1
			Effective HEC-RAS v3.0.1 Effective 6/18/2007	Split Model Corrected Effective HEC-RAS v3.0.1	Compare Effective to Effective WSE*
			WSE (ft)	WSE (ft)	
32382.3	1100	3033	96.59	96.35	(0.24)
32282.3	1100	3020	96.62	96.19	(0.43)
32267.5			STEFFANI		
32234.4	1100	3014	96.50	95.29	(1.21)
32088.3	1100	2997	96.39	94.88	(1.51)
31967.0	1200	2989	96.41	94.95	(1.46)
31888.1			GESSNER ROAD		
31836.0	1200	2989	96.41	94.43	(1.98)
31683.4	1200	2991	96.38	94.41	(1.97)
31559.8	1350	2991	96.25	94.26	(1.99)
31545.6			TALINA WAY		
31512.4	1350	2991	96.01	94.15	(1.86)
31413.3	1350	2990	95.69	94.02	(1.67)
31303.0	1350	2991	95.54	93.89	(1.65)
31210.3	1370	2990	95.40	93.77	(1.63)
31186.8			HOLLOW HOOK ROAD		
31163.3	1370	2990	95.40	93.43	(1.97)
31058.5	1370	2989	95.33	93.36	(1.97)
30876.1	1370	2988	95.34	93.32	(2.02)
30772.2	1450	2987	95.26	93.28	(1.98)
30744.2			SOUTHERN PACIFIC RAILROAD		
30716.2	1450	2436	95.15	93.18	(1.97)
30620.0	1450	2436	95.07	93.15	(1.92)
29947.0	1450	2430	94.61	92.98	(1.63)
29455.4	1450	2430	94.47	92.81	(1.66)
29360.2	1500	2429	94.45	92.78	(1.67)
29314.2			WINDFERN ROAD		
29268.2	1500	2177	94.26	92.58	(1.68)
29137.9	1500	2176	94.15	92.48	(1.67)
28685.1	1500	2173	93.78	92.22	(1.56)
28586.7	1530	2172	93.73	92.15	(1.58)
28566.0			PALO PINTO DRIVE		
28545.6	1530	2035	93.66	92.07	(1.59)
28447.5	1530	2035	93.56	92.00	(1.56)
28126.0	1530	2031	93.33	91.80	(1.53)
28025.6	1600	2031	93.27	91.63	(1.64)
28003.6			SPRING BROOK DRIVE		
27981.6	1600	2029	92.58	91.30	(1.28)
27878.3	1600	2029	92.16	91.24	(0.92)
27792.7	1600	2029	92.02	91.21	(0.81)
27694.0	1600	2029	92.00	91.20	(0.80)

Attachment 1
Brickhouse Gully LOMR
Response to Local Review Comments
100-Year HEC-RAS Model Comparison (Revised)

River Station	Q (cfs) Steady	Q (cfs) Unsteady	1	2	2 - 1
			Effective HEC-RAS v3.0.1 Effective 6/18/2007	Split Model Corrected Effective HEC-RAS v3.0.1	Compare Effective to Effective WSE*
			WSE (ft)	WSE (ft)	
27634.0			CLAY ROAD (LIVELY)		
27574.0	1600	2029	91.09	91.02	(0.07)
27466.2	1600	2030	90.97	91.00	0.03
26924.0	1660	2028	89.57	89.57	-
26768.1	1660	2027	89.45	89.45	-
26731.1			SPRING VALLEY ROAD		
26694.1	1660	2025	88.82	88.82	-
26592.7	1660	2025	88.71	88.71	-
26206.4	1700	2025	88.19	88.19	-
25817.0	1700	2025	87.87	87.87	-
25717.2	1700	2025	87.84	87.84	-
25700.7			CLARBLAK LANE AND PIPELINE UPSTREAM		
25676.2	1700	2025	87.05	87.05	-
25569.5	1700	2025	86.73	86.73	-
25168.3	1700	2025	86.41	86.41	-
25073.7	1790	2025	86.45	86.45	-
25046.2			CAMPBELL ROAD		
25018.7	1790	2025	85.77	85.77	-
24912.8	1790	2025	85.84	85.85	0.01
24695.0	1850	2025	85.79	85.79	-
24323.0	1850	2024	85.64	85.64	-
24223.1	1850	2024	85.70	85.70	-
24166.1			BLALOCK		
24109.1	1850	2024	85.03	85.03	-
24010.9	1850	2071	85.03	85.03	-
23509.6	2900	2063	83.66	83.66	-
23119.4	2900	2050	83.52	83.52	-
22950.0	2900	2031	83.59	83.59	-
22930.4			MORNINGVIEW DRIVE AND PIPELINE UPSTREAM		
22903.4	2900	2031	83.33	83.33	-
22749.1	2900	2026	83.12	83.12	-
22580.1	2900	2025	83.07	83.07	-
22469.6	2900	2025	83.03	83.03	-
22442.1			GALWAY LANE		
22414.6	2900	2025	83.13	83.13	-
22256.2	2900	2024	82.99	82.99	-
21928.0	2900	2024	82.94	82.94	-
20792.6	2900	2024	83.02	83.02	-
20146.5	5430	2024	80.88	80.88	-
18986.6	5616	2024	81.50	81.50	-
18689.2	5616	2024	81.53	81.53	-

LOMR Table showing drops in Water Surface Elevations along Brickhouse Gully

Table 1
Pinecrest Golf Course CLOMR
100-Year HEC-RAS Model Comparison

River Station	Q (cfs) Steady	1 Effective HEC-RAS v3.0.1 Effective 6/18/2007 +LOMR 15-06-0275P WSE (ft)	2 Proposed HEC-RAS v3.0.1 WSE (ft)	2-1 Compare Effective to Proposed WSE
32382.3	1100	96.35	95.06	-1.30
32282.3	1100	96.19	94.70	-1.49
32267.5		STEFFANI		
32234.4	1100	95.29	93.75	-1.54
32088.3	1100	94.89	91.83	-3.06
31967.0	1200	94.96	92.16	-2.80
31888.1		GESSNER ROAD		
31836.0	350	94.44	91.72	-2.72
31683.4	350	94.41	94.41	0.00
31559.8	500	94.26	94.26	0.00
31545.6		TALINA WAY		
31512.4	500	94.15	94.15	0.00
31413.3	500	94.02	94.02	0.00
31303.0	500	93.89	93.89	0.00
31210.3	520	93.77	93.77	0.00
31186.8		HOLLOW HOOK ROAD		
31163.3	520	93.43	93.43	0.00
31058.5	520	93.36	93.36	0.00
30876.1	520	93.32	93.32	0.00
30772.2	600	93.28	93.28	0.00
30744.2		SOUTHERN PACIFIC RAILROAD		
30716.2	600	93.18	93.18	0.00
30620.0	600	93.15	93.15	0.00
29947.0	600	92.98	92.98	0.00
29455.4	600	92.81	92.81	0.00
29360.2	650	92.78	92.78	0.00
29314.2		WINDFERN ROAD		
29268.2	650	92.58	92.58	0.00
29137.9	650	92.48	92.48	0.00
28685.1	650	92.22	92.22	0.00
28586.7	680	92.15	92.15	0.00
28566.0		PALO PINTO DRIVE		
28545.6	680	92.07	92.07	0.00
28447.5	680	92.00	92.00	0.00
28126.0	680	91.80	91.80	0.00
28025.6	750	91.63	91.63	0.00
28003.6		SPRING BROOK DRIVE		
27981.6	750	91.30	91.30	0.00
27878.3	750	91.24	91.24	0.00
27792.7	750	91.21	91.21	0.00
27694.0	750	91.21	91.21	0.00

Table showing showing additional drops in Water Surface Elevations along Brickhouse Gully from CLOMR.