



August 30, 2019

VIA EMAIL to rulescomments@twdb.texas.gov

Texas Water Development Board

Re: Implementation of Flood Legislation from the 86th Texas Legislative Session, Issues for Stakeholder Consideration and Request for Feedback

To the Texas Water Development Board's Flood Planning Group:

Bayou City Waterkeeper,¹ a nonprofit advocacy organization working to protect and restore the Lower Galveston Bay watershed, appreciates the opportunity to comment on the Texas Water Development Board's (TWDB) "Implementation of Flood Legislation from the 86th Texas Legislative Session, Issues for Stakeholder Consideration and Request for Feedback." We are encouraged to see that the TWDB is soliciting community input to create a flood mitigation funding program with the intention of reducing loss of life and increasing resilience across the state. Texas will benefit from a flood plan that is objective, science-based, and forward-thinking, and rooted in communities, conservation, and nature-based flood solutions.

General Comments

1. TWDB must center affected communities in this process.

At the heart of any plan to make Texas more resilient to flooding must be this state's people. The TWDB must include Texans at every step of this planning process and commit to a transparent, community-centered process.

In soliciting comments from stakeholders in the context of its flood planning, we thank TWDB for scheduling a series of meetings across the state, including Houston, and adding webinars both during and outside of standard work hours as options for those who were unable to attend in person. These steps have increased opportunities for Texans to participate in this planning process.

We have concerns, however, that the TWDB already has engaged in significant planning, and narrowed available options, before consulting the public. To meaningfully use feedback received from the public through processes like the statewide meetings held over the last month, we urge the TWDB to engage the public, and affected communities in particular, first—and only then engage in significant planning.

For public participation moving forward, we have four immediate recommendations:

- In reviewing comments provided throughout this initial scoping process, the TWDB should not hesitate to modify, or even discard, current proposals to the extent they do not reflect what the public at large—and particularly, those communities most affected by flooding—wants out of this process.
- The TWDB must allow a minimum of 60 days for the public to comment on the draft plan.

¹ Bayou City Waterkeeper, 2010 N. Loop West, Ste 103, Houston, TX 77018, www.bayoucitywaterkeeper.org.

- During the comment period, the TWDB must hold meetings across the state, as well as live, recorded webinars, to educate the public about key aspects of the plan and receive public comments.
- The TWDB must translate all documents and presentations related to the draft plan into the major languages spoken in Texas, including, at a minimum, Spanish and Vietnamese. This includes providing translation services at in-person meetings and hosting an informational webinar in these languages.

2. To prevent loss of life, TWDB must prioritize moving people out of harm’s way in an equitable manner.

Sea-level rise, coastal erosion, and major storm events will increase the risk of flooding in Texas and place people, property, and local economies in jeopardy. Preserving undeveloped land within floodplains and working with communities to buy out property that has already flooded multiple times will do much to meet the TWDB’s stated goal of reducing loss of life and property.

This would be money well-spent. Analysis of federal recovery costs across the country shows that completed buyout programs pay for themselves, usually within about 10 years.² To illustrate, after historic flooding along the Mississippi River from 1993-1995, FEMA and the state of Missouri invested roughly \$75 million to buy 4,045 repetitive-loss properties across eight eastern counties. From 1999-2008, Missouri faced 14 presidential disaster declarations due to flooding. Analyzing the performance of buyouts in 2009, FEMA and Missouri found that for the 885 properties for which there were adequate data, the buyouts prevented nearly \$97 million in losses during those 14 flood disasters, representing a **212 percent return on investment** for the \$44 million of public funds that had been invested in those particular buyouts.

In a multistate study of buyouts following the 1993 Midwest floods, the National Wildlife Federation (NWF) reported a \$2 return to taxpayers for every \$1 invested in buyouts of repetitive-loss properties within five years. This estimate was conservative because it did not capture additional costs that the buyouts prevented, including flood response, evacuation, and recovery efforts, as well as suffering and the loss of human life. NWF explained:

“The compelling evidence from the Midwest Flood is that using voluntary buyouts to deal with the core clusters of high repetitive loss properties can serve two goals simultaneously: the number of people given long-term help is maximized while a fiscally responsible expenditure of federal tax money ensures the elimination of future federal disaster relief and other claims.”³

Similar cases exist from around the country:

- **Kinston, North Carolina.** Kinston, a city of about 20,000, suffered repeated flood losses during the 1990s. After three hurricanes damaged or flooded more than 75% of the county’s homes, flood-prone properties were purchased, and whole neighborhoods were relocated to higher ground. As a result, natural floodplain functions were restored, and the purchase of the first 100 homes saved approximately \$6 million in avoided flood losses during the next big storm.⁴

² Center for American Progress, Moving Out of Harm’s Way (Dec. 2013), available at <https://www.americanprogress.org/issues/green/reports/2013/12/12/81046/moving-out-of-harms-way/>

³ National Wildlife Federation, Higher Ground: A Report on Voluntary Property Buyouts in the Nation’s Floodplains, A Common Ground Solution Serving People at Risk, Taxpayers and the Environment, at 39 (1998), available at https://www.nwf.org/~media/PDFs/Water/199807_HigherGround_Report.ashx

⁴ NOAA, Out Of Harm’s Way: Relocation Strategies To Reduce Flood Risk, available at <https://coast.noaa.gov/digitalcoast/training/kinston-flood-risk.html>

- **Shepherdsville, Kentucky.** FEMA and the state government invested \$1.3 million in property buyouts. After four 100-year floods and one 500-year flood repeatedly inundated the region from 1999-2011, this investment yielded a 245 percent return in avoided losses.⁵
- **Baker County, Georgia.** Tropical Storm Alberto caused \$4.5 million in damages in 1994 and prompted \$754,000 in buyouts by FEMA and the state. In 1998, a massive storm again flooded the area. Nearly \$2 million in damage was prevented by the previous buyouts, representing a return of approximately 265 percent in less than five years.
- **Iowa.** The buyout of 703 floodplain properties in 12 communities between 1988 and 2008 yielded a 219 percent return on investment following the floods of 2008 alone, representing an average of \$140,408 (in 2008 dollars) in total losses avoided for each property.

Buyouts continue to provide cost savings over the long-term by permanently reducing or altogether avoiding flood risk and costs associated with response and recovery.

Buyouts would facilitate creation of other benefits to the public. Buyouts also simultaneously benefit the public in other ways, such as physical buffers to future floods, public recreational space, and enhancing wildlife habitat.⁶ Buyout programs also offer an opportunity to physically adapt coastlines to the inevitability of sea-level rise. Such adaptation is an unavoidable task that we can either choose to undertake in an orderly fashion or wait to have imposed on us through emergency response to the next extreme weather disasters we know are coming to our coast.

Communities must be centered in any buyout process. TWDB needs to take additional steps to make sure buyouts are equitable.⁷ For example, TWDB needs to be proactive with disaster preparation, involve communities in weighing buyout and relocation pros and cons, ensure buyouts offer a fair price that allows a homeowner to purchase a similar home or require a buyout program be accompanied by similar investment in affordable housing, and pick solutions that avoid new problems.⁸ As explained by JT Harechmak, an analyst at the Texas Low Income Housing Information Service:⁹

“You need to pay people a fair price for [their] house that encourages some kind of collateral-to-upward mobility... You need to support people through that process with community engagement that fosters trust and centers the people who are surviving this disaster. Then you need to have an eye towards what that's done your housing stock and if it means you need to produce a bunch more affordable housing or incentivize much more affordable housing, that's going to have a price tag too.”

Buyouts are addressed in greater detail throughout this comment letter.

⁵ Center for American Progress, Moving Out of Harm's Way (Dec. 2013), available at <https://www.americanprogress.org/issues/green/reports/2013/12/12/81046/moving-out-of-harms-way/>

⁶ The Nature Conservancy's Strategic Property Buyouts to Enhance Flood Resilience: Creating a Model for Flood Risk Reduction, Community Protection and Environmental Gains, available at <https://www.nature.org/content/dam/tnc/nature/en/documents/harveybuyoutsummary.pdf>.

⁷ NOAA, Out Of Harm's Way: Relocation Strategies To Reduce Flood Risk, available at <https://coast.noaa.gov/digitalcoast/training/kinston-flood-risk.html>

⁸ NOAA, Out Of Harm's Way: Relocation Strategies To Reduce Flood Risk, available at <https://coast.noaa.gov/digitalcoast/training/kinston-flood-risk.html>

⁹ Kinder Institute, Buyouts Bring Promise and Challenges to Flood-Affected Homeowners (Aug. 21, 2018), available at <https://kinder.rice.edu/2018/08/20/buyouts-bring-promise-and-challenges-flood-affected-homeowners>.

3. Work with—not against—nature.

The TWDB focuses on structural versus non-structural flood mitigation projects. These two categories unfortunately do not capture ecosystem restoration services and the benefits these provide to landscape-style resiliency. We urge TWDB to consider adding an independent category of flood mitigation projects to complement those two categories: nature-based solutions.

Nature-based projects give communities social, economic, and environmental benefits; they may improve water quality, capture carbon, and open land for recreation, wildlife, and local agriculture. On Texas' coast in particular, nature-based solutions offer the opportunity to implement long-term, resilient systems to offset the effects of sea-level rise, coastal erosion, and major storm events. Nature-based solutions can extend the life of projects and have a lower risk of failure during severe weather events (i.e. flood or drought).

Bayou City Waterkeeper recommends that TWDB require and/or incentivize nature-based solutions. No potential project should be composed of traditional engineering solutions alone, but should also incorporate the enhancement and creation of wetland, woodland, and floodplain areas to maximize benefit and resiliency. For example, in developing detention, it is preferable to use natural wetlands instead of engineered wetlands; in enhancing bayous, the use of native plant material should be followed as a "best practice," etc.. In all cases, projects must be analyzed not only for the cost-effectiveness of the initial capital costs, but also for the long-term operating, maintenance, and replacement costs, as well as the human costs.

Nature-based solutions the TWDB should consider include:

- Protection of existing and potential conservation lands;
- Use of the natural capacity of wetlands and coastal prairies, such as the Katy Prairie, to hold water;
- Restoration of prairies to increase storage capacity;
- Acquisition, protection, and restoration of additional prairies, forests, wetlands, and floodplain/floodway lands for conservation purposes;
- Preservation of lands along the various tributaries to Addicks and Barker Reservoirs;
- Acquisition of properties to increase the width of the protective riparian corridor to keep people from harm's way, decrease flood losses, and increase access to open space and recreational facilities;
- Protection and enhancement of wetlands;
- Landscape-scale restoration of wet prairie;
- Landscape-scale restoration of tallgrass prairie;
- Promotion of land uses, such as rice fields, to improve storage during flood events;
- Contracting with local farmers for maintenance of nature-based infrastructure; and
- Establishment of riparian woodlands to slow flood flows.

Nature-based solutions are discussed in greater detail throughout this comment letter.

SB 7: State Flood Funding Issues for Consideration

Issue 1: Financial assistance

How should the TWDB determine the amount of grants versus loans?

The TWDB's planning must recognize that loans only are a realistic option for a subset of Texas communities. The TWDB must learn more the successes and shortfalls of similar programs and address them in its own. By way of illustration, the federal SBA post-disaster loan program was extremely successful in serving middle-income populations, it left lower-income populations behind. To serve all Texans, the TWDB's program

must design funding mechanisms that anticipate the intertwined obstacles that lower-income communities face: failing infrastructure, multiple flooding events, and, importantly, lack of money on hand to recover quickly.

We therefore recommend that the TWDB design a flexible tool for evaluating when a grant versus a loan is appropriate. To make sure all Texans benefit from the new flood program, sufficient grants must be made available to low-income communities that cannot afford a loan or easily pay it off.

What is the maximum amount of a low-interest loan the TWDB can provide for this to be a viable program (low-interest, zero-interest, or some combination)?

The TWDB must not limit the number of low-interest loans that it can provide. Instead, the TWDB must identify the needs of communities affected by flooding. The TWDB should, with public input, develop a prioritization process that puts those in deepest need—those facing the intertwined obstacles of failing infrastructure, multiple flooding events, and lack of money to recover quickly—first in line to receive funding. On determining that a project warrants funding, the TWDB can then determine whether funding should take the form of a low-interest loan, grant, or something else.¹⁰

How should the TWDB evaluate an entity's ability to repay a loan in determining qualifications for grant funding?

Ability to repay should not be a factor for project selection. Instead, the TWDB first should evaluate a project on its merits (i.e., whether the project will take people out of harm's way, works with nature, and offer additional benefits to local communities) and then evaluate ability to repay when determining whether to structure funding as a grant or loan.

Should a local match be required?

The Texas Legislature did not mandate a local match for a political subdivision to receive financial assistance for a project. The TWDB should not impose this requirement on its own, particularly in lower-income communities. Requiring a local match may slow down the process and continue to leave behind communities who need the TWDB's flood funds most.

A political subdivision certainly may offer a local match, and TWDB may consider accepting that offer.

Issue 2: Prioritization System

What types of projects do you consider having the most impact mitigating loss of life and property?

TWDB should fund projects to buy out or raise property that (1) has flooded repeatedly, (2) is located within the 100-year floodplain, and/or (3) is currently undeveloped and located within the 500-year floodplain. By focusing on these types of properties, the TWDB may achieve multiple benefits beyond saving lives and property. (See the general comments regarding buyouts on p. 2-3.)

¹⁰ The TWDB should develop a framework to methodically determine who should receive a low-interest loan versus a grant.

TWDB needs to take additional steps to make sure buyouts are equitable.¹¹ For example, TWDB needs to be proactive with disaster preparation; involve communities in weighing buyout and relocation pros and cons; ensure buyouts offer a fair price that allows a homeowner to purchase a similar home or require a buyout program be accompanied by similar investment in affordable housing; and, pick solutions that avoid new problems.¹² NOAA's Office for Coastal Management's Peer-to-Peer Study, *Out Of Harm's Way: Relocation Strategies To Reduce Flood Risk*, examines the use of strategic buyouts in hurricane-battered Kinston, North Carolina, and identifies considerations that TWDB may consider to make sure buyouts are used equitably and with respect for the communities that will be displaced.¹³

When pursuing buyouts and relocations, all efforts should be made to expedite the process so Texans can recover as quickly as possible. Historically, delaying funding by months or years after a storm decreases the number of homeowners interested in a buyout. The TWDB has the opportunity to resolve this known shortcoming by reducing the time it takes for funds within its control to become available.

Buyouts offer the chance for the TWDB to provide communities with ongoing benefits beyond the elimination of future disaster-response: After buying out property, the TWDB may fund restoration of floodplain lands back to their natural environmental conditions and create other benefits associated with nature-based solutions discussed on p. 4 and throughout this comment letter.

In the Galveston-Houston region, for instance, restored coastal wetlands may absorb and hold floodwaters, buffering the surrounding communities from inundation; filter pollutants from runoff; and provide public recreational space that enhances property values and public health for the surrounding community. Restored coastal ecosystems also may capture and store immense quantities of atmospheric carbon dioxide and ultimately help mitigate climate change in addition to enhancing local resilience to its destructive effects.¹⁴

In other words, buyouts offer the TWDB an opportunity to transform floodplain lands from a massive liability into a valuable community asset.

How can these criteria ensure the best use of state funds as a complement to local and federal funding?

Before considering the availability of other funding, the TWDB first should evaluate whether a project takes people out of harm's way, works with nature, and offers communities multiple benefits. In evaluating whether to award funding, the TWDB should not constrain its awards to the availability of other funds, such as a local match. Instead, to not leave communities with less resources behind, the TWDB should take a flexible approach and consider how a community taken steps to make their communities more resilient, whether through committing their own funding, restricting development in floodplains or in sensitive coastal areas, or enforcing existing floodplain regulations.

The TWDB also may enhance federal buyout programs by making funding available on an expedited basis and by making funding available to low-income communities to meet local match requirements.

¹¹ NOAA, *Out Of Harm's Way: Relocation Strategies To Reduce Flood Risk*, available at <https://coast.noaa.gov/digitalcoast/training/kinston-flood-risk.html>

¹² NOAA, *Out Of Harm's Way: Relocation Strategies To Reduce Flood Risk*, available at <https://coast.noaa.gov/digitalcoast/training/kinston-flood-risk.html>

¹³ NOAA, *Out Of Harm's Way: Relocation Strategies To Reduce Flood Risk*, available at <https://coast.noaa.gov/digitalcoast/training/kinston-flood-risk.html>

¹⁴ See *generally* *Nature-Based Solutions: The Missing Ingredient in Climate Adaptation?*, Earth Institute, Columbia University, available at <https://blogs.ei.columbia.edu/2019/06/28/nature-based-solutions-climate-adaptation/>

Should there be funding set aside for particular types of activities or projects?

As discussed throughout this comment letter, funding should be set aside to allow for buyouts immediately after future large-scale storm events and provide for relocation to similar or better affordable housing. When federal buyout funding is available months (if not years) after a storm, the number of homeowners interested in the program decreases. The TWDB has the opportunity to resolve this known shortcoming by reducing the time it takes for funds to become available and help Texans can recover as quickly as possible.

Should the program address needs for repair and rehabilitation of existing infrastructure that manages floodwaters?

Yes, repairing and rehabilitating existing infrastructure is one approach, of many, that the TWDB must take to address flooding across the state. If existing infrastructure is within the floodplain, the TWDB must evaluate whether to repair the infrastructure and make it flood resilient or relocate the infrastructure out of the floodplain.

Which of the following criteria should the TWDB use in its point system? Are there any additional criteria that should be added to this list?

The TWDB's framework must emphasize two key principles: taking people out of harm's way and working with, not against nature. This means prioritizing:

- minimizing loss to human life and minimizing human injuries,
- repairing or removing property that has flooded multiple times,
- taking critical infrastructure out of the floodplain,
- integrating existing natural systems and nature-based solutions into larger-scale projects,
- benefits to water quality,
- carbon capture,
- habitat creation or restoration, and
- recreational benefits to communities.

The TWDB should use the Center for Disease Control's Social-Vulnerability Index¹⁵ and Harris County's Harris Thrives Resolution¹⁶ and related Equitable Prioritization Framework in its planning processes.

With these principles and frameworks in mind, the TWDB should consider each of the factors already identified and give weight to projects that will move people out of harm's way and work with nature, while also serving multiple benefits to communities or the public at large.

The TWDB should **not** emphasize financial factors such as property values, availability of local matches, or use cost-benefit analyses as primary criteria. Emphasizing these factors will favor benefits to a smaller number of relatively wealthier property owners and exacerbate existing environmental and economic injustices. Emphasizing reduction to loss of life and additional multiple benefits to communities, including those identified under the CDC's Social-Vulnerability Index, will better accomplish the purpose of TWDB's flood program.

The TWDB should apply the "emergency need" factor sparingly and define it in such a way so as not to allow emergencies to dispose of important public participation and environmental review. In many cases, particularly in the case of potential buyouts, what areas might benefit from funds during an emergency can be determined

¹⁵ <https://svi.cdc.gov/>

¹⁶ Harris Thrives Resolution (passed Aug. 27, 2019), available at <https://files.constantcontact.com/81a41547001/98fd956e-4e6a-4f0e-bd37-f1fbe2a12b72.pdf>

in advance, and as a result, the TWDB may start the planning process in advance of disaster to avoid the need for expediting public participation and environmental review after a disaster.

The TWDB should **not** emphasize water supply benefits for flood projects to the extent this will result in local sponsors building dams and lakes, which in turn will destroy more rivers, streams, natural landscapes, and ecosystems. Instead, the only water supply benefits the TWDB should consider are whether a project will improve water quality and/or restore local ecosystems.

The TWDB also must consider additional factors beyond those identified including:

- climate change, projected sea-level rise, high-level tide data, projected rainfall data, and other best available science to assess the life of proposed development, infrastructure, and local projects,
- for grants to local governments, whether those governments have committed their own funds to flood protection or taken other steps to make their communities more resilient, such as restricting development in floodplains or in sensitive coastal areas and enforcing existing floodplain regulations,
- for buyouts, making sure communities want buyouts, and examining whether it is feasible to instead give communities funds to elevate their properties or otherwise make them flood resilient,
- for buyouts with communities' consent, taking steps to move entire communities together,
- for rebuilds/repairs, imposing and incentivizing restrictions on building and construction, including requiring pier-and-beam foundations, using native grasses with deeper roots, and other measures designed to make neighborhoods more resilient to flooding.

Issue 3: What Projects Get Prioritized

Which system do you think would work best for flood financial assistance? Can you suggest an alternative method for prioritization, including any applications for federal financial assistance with prioritization systems that the TWDB could use as a model?

It is our understanding that the priority systems that TWDB has experience with (SWIFT and SRF) have pros and cons. Whatever prioritization framework the TWDB considers adopting, TWDB must consult further with communities, stakeholders, and other governmental entities implementing their own flood mitigation programs and adopt and adapt their best efforts into its own program. For example, over the last year, when considering how to implement \$2.5 billion funds authorized through a flood bond, the Harris County Flood Control District worked with stakeholders to create the Harris Thrives Resolution, which was recently approved by the Harris County Commissioners' Court. The resolution directs flood control to develop a prioritization framework, utilizing the CDC's Social Vulnerability Index instead of a traditional cost-benefit ratio, to identify and emphasize multiple benefits. At a minimum, the TWDB should consult with Harris County stakeholders, Harris County, and the Harris County Flood Control District and evaluate aspects of this tool might work in a statewide flood program or the regional flood group(s) overlapping with Harris County.

Issue 4: Property Buyouts

Should the financial assistance be available for political subdivisions that want to use the money to purchase private property to prevent future flood losses? How could state funds be used to complement federal buyout programs?

Yes, though as discussed throughout this comment letter, the TWDB should require political subdivisions to consult with local communities to confirm whether funding building improvements (like elevation) are feasible,

and if so, whether those communities prefer receiving funding for building improvements versus buyouts.¹⁷ When buyouts are determined to be the best option for a community, the TWDB must require political subdivisions to have a plan and funding for relocation in place. The TWDB should restrict development on bought-out property as a condition of funding and only allow uses compatible with flooding, such as low-impact recreational uses.

Also, funding should be set aside for future buyouts immediately after a large-scale storm event. This will allow the TWDB and local communities to expedite the buyout process so Texans can recover as quickly as possible. When federal buyout funding is available months if not years after a storm, the number of homeowners interested in the program decreases. The TWDB has the opportunity to resolve this known shortcoming by reducing the time it takes for funds to become available.

TWDB also should provide financial assistance to low-income communities who would like funding to meet a local match requirement. State financial assistance for buyouts should not be limited to such situations, however. If a local buyout project could increase the size of an area in which a federal buyout was planned or in progress and thus would enhance the effectiveness and benefits of the buyout, the TWDB should treat that as a positive factor in evaluating the application for that local project.¹⁸

What benefits should be considered when determining rank in project prioritization?

As noted above, the TWDB's framework must emphasize two key principles: taking people out of harm's way and working with, not against nature. This means prioritizing:

- minimizing loss to human life and minimizing human injuries,
- repairing or removing property that has flooded multiple times,
- taking critical infrastructure out of the floodplain,
- integrating existing natural systems and nature-based solutions into larger-scale projects,
- benefits to water quality,
- carbon capture,
- habitat creation or restoration, and
- recreational benefits to communities.

The TWDB also must consider additional factors beyond those identified including:

- climate change, projected sea-level rise, high-level tide data, projected rainfall data, and other best available science to assess the life of proposed development, infrastructure, and local projects,
- for grants to local governments, whether those governments have committed their own funds to flood protection or taken other steps to make their communities more resilient, such as restricting development in floodplains or in sensitive coastal areas and enforcing existing floodplain regulations,
- for buyouts, making sure communities want buyouts and examining whether it is feasible to instead give communities funds to elevate their properties or otherwise make them flood resilient,
- for buyouts with communities' consent, taking steps to move entire communities together,

¹⁷ NOAA, Out Of Harm's Way: Relocation Strategies To Reduce Flood Risk, available at <https://coast.noaa.gov/digitalcoast/training/kinston-flood-risk.html>

¹⁸ The Nature Conservancy's Strategic Property Buyouts to Enhance Flood Resilience: Creating a Model for Flood Risk Reduction, Community Protection and Environmental Gains, available at <https://www.nature.org/content/dam/tnc/nature/en/documents/harveybuyoutsummary.pdf>.

- for rebuilds/repairs, imposing and incentivizing restrictions on building and construction, including requiring pier-and-beam foundations, using native grasses with deeper roots, and other measures designed to make neighborhoods more resilient to flooding.

What requirements for future land use should be placed upon properties that are bought out?

TWDB should restrict the future use of bought-out properties to forbid future residential, industrial, commercial, or institutional development, and allow only compatible recreation, research, wildlife, and ecosystem restoration management uses on bought-out property. Any facilities built in floodplains must be flood-proofed and should not be allowed to fill in floodplain capacity.

Issue 5: Memorandum of Understanding with All Other Political Subdivisions in the Watershed

Do you have suggestions to improve this approach? What should the MOU contain and what other considerations would a political subdivision want to address in the MOU?

Bayou City Waterkeeper agrees that an MOU with all other political subdivisions in the watershed would benefit flood control projects, and also agrees that the project watershed estimates need to include both upstream and downstream affected areas. Cooperation among political subdivisions within the watersheds, in the form of an MOU, must be an important priority for funding. Watersheds do not stop at the political subdivision boundaries, and watershed projects should reflect this reality.

Toward the goal of maximizing watershed benefits, we recommend that the TWDB require political subdivisions entering an MOU adopt similar planning, design, and development standards within the project watershed. These standards should default to those used by the political subdivision with the most stringent standards.

Issues 6 & 7: Flood Control Planning and What Have We Not Thought About?

How can these activities be funded so that they are not duplicative of regional flood planning, to be implemented via SB 8?

Assuming regional flood plans largely will follow the model of regional water supply planning, we do not foresee a great deal of duplication between the planning activities in SB 7 and the type of planning envisioned in SB 8, except in general “planning for flood protection” noted in SB 7. To the extent planning overlaps, TWDB could tailor the scope of work for the SB 7 planning activities so that the same work is not funded twice.

Should these activities be funded through the TWDB’s existing Flood Protection Planning grant program, provided that they coordinate with and do not duplicate regional flood planning activities?

Yes.

What other issues do you see that the TWDB faces for this program?

TWDB must account for certain challenges it will face in implementing its program:

- High expectations for funding flood projects, compared to the funding that is available.
- The traditional bias in flood control toward structural approaches, and the lack of awareness among many local and regional political subdivision officials about the flood-reduction benefits offered by nonstructural approaches and nature-based solutions.

- The different nature of most flood control projects, compared to water supply and wastewater treatment projects. The latter generate revenues from which loans may be repaid; flood projects, in contrast, may generate no revenue, which could complicate the ability of some political subdivisions to access even low-interest loans to fund flood projects.
- The inadequacies of current data with regard to identifying flood risks, mapping floodplains, and determining residual flood risk for those neighborhoods and communities that are not considered to be in “the floodplain.”
- Inadequate public understanding about floods and flood risks, in part related to the inadequacies of current data but also to lack of sufficient public education and information activities to raise the level of flood awareness.

What other issues do potential program participants face?

In addition to the challenges identified immediately above, program participants will face the learning curve of trying to understand a new funding program and trying to navigate a new process for preparing applications based on what will be an unfamiliar point system.

How do you suggest that we address those issues?

TWDB could address the challenges identified above as follows:

High expectations v. funding. The development of the regional and state flood plans offer the opportunity to show the Texas Legislature the need for a greater, long-term commitment of funds for flood projects and the more precise costs of flood mitigation over the long-term. That could help close the gap between expectations and actual funding levels for flood projects. In addition, emphasizing internal coordination of project applications within TWDB and close interaction with the regional flood planning groups to identify ways of complementing projects for greater impact will help stretch available dollars.

Bias toward traditional engineering approaches. TWDB on its own, or in conjunction or coordination with advocacy groups, should undertake a proactive effort to educate political subdivisions and the public about nonstructural flood alternatives, including natural or nature-based solutions, to address flood issues in a cost-effective manner. In Harris County, the Conservation Flood Mitigation Group, comprising several local conservation organizations including Bayou City Waterkeeper, has undertaken a similar effort to educate Harris County Flood Control District about integrating nature-based solutions into their flood mitigation projects. The TWDB could consult with these groups, or invite them to join or consult with relevant regional planning groups.

Revenue. TWDB should contract with a research or education institution and develop and provide information for political subdivisions about how to use various revenue sources such as drainage or other fees to pay back low-interest loans for flood projects.

Inadequacy of data. As we understand it, TWDB as a result of funds appropriated to the agency by the Texas Legislature this session will be enhancing its technical and scientific flood work, which already has advanced considerably in the past several years, and thus will be able to provide supplemental information to political subdivisions and flood planners to those data sources available elsewhere.

Inadequate public information. TWDB should make a special effort—again perhaps in conjunction with other organizations—to package the information it gains through its technical and scientific work in a way that makes that information accessible and understandable to the public online, and via appropriate

publications to help raise the education level of the public about flooding and flood issues. One benefit of that effort will be helping to build public support for continued state resources to deal with flooding.

Once the rules have been adopted for implementation of the flood funding program, TWDB should consider holding workshops in different parts of the state (as it has for the SWIFT program) to help local and regional political subdivisions and flood planners understand and navigate the new system for applying for funding for flood projects. The agency could partner with political subdivisions and nonprofit organizations to share the costs of the workshops.

SB 8: State and Regional Flood Planning Issues for Consideration

Issue 1: Planning Group Membership

Are the minimum membership requirements of the flood planning groups adequate or should there be additional voting or non-voting membership categories added to all of the flood planning groups? If so, what are the categories of membership?

To these groups, TWDB should add as voting members representatives of land trusts, water trusts (where available), low-income communities that have flooded, and universities/research institutions. TWDB should appoint one representative per category and not allow some interests more representatives than others. Planning groups must not be allowed to exclude an interest by saying they have not found anyone to represent that category. Planning groups must find persons who represent all categories.

For major river basins that are split between flood planning groups, should those particular planning groups have an additional, non-voting member that acts as a liaison with the other planning group within that same river basin?

To the extent major river basins are divided, yes, and an alternate to this non-voting member should also be identified.

Issue 2: Planning Standards and Parameters

What is the best way to incorporate a lower limit on the scale of flood projects that should be considered by regional flood planning process?

TWDB should not use a single lower limit for scale across the state and instead should offer flexibility to account for differences across communities and regions. The TWDB should allow each regional flood planning group to consider projects for smaller drainage areas where they believe that to be appropriate, based on specific circumstances, public input, and expert advice in the region.

What timeframe should the planning horizon cover (10 years, 20 years, 30 years, etc.) and how should the process address future growth, changing conditions, and uncertainties?

The timeframe for the planning horizon should be 30-50 years to allow for the planning groups to fully address the long-term effects of future population growth and changing conditions (including climate change and sea-level rise) on flooding. Within that planning horizon, the TWDB should establish several shorter timeframes to aid in planning and provide public checkpoints along the way. Further, whatever planning horizon is chosen, each regional and state flood plan will be revisited every five years, which will give regional groups an opportunity to incorporate new climatic, flood, and other data on a recurring basis.

What flexibility should the planning groups have in determining the scale and scope of their plans, recognizing that all groups must meet certain minimum planning standards and criteria?

While each planning group should be required to meet certain standards and criteria, the TWDB should afford each group flexibility to address the particular needs of their region and watershed. One minimum planning standard should be that each planning group consider the potential levels of flooding based on future scenarios, taking into consideration sea-level rise and climate change.

Issue 3: Planning Area Boundaries

How should the larger river basins be divided? How should the smaller river basins be combined with other basins? How should the coastal basins be addressed?

For watersheds that span geographically large parts of the state, rather than divide the watershed entirely, the TWDB should create planning sub-groups which can coordinate closely with groups comprising the larger watershed as a whole. With respect to coastal basins, regional flood planning groups that include coastal areas will have to have the ability to address coastal flooding across overlapping river basins.

Issue 4: Benefit-Cost Analysis

How should the benefit-cost ratio of proposed projects be considered? What are the pros and cons of different benefit-cost calculation methods?

Benefit-cost ratios, which tend to neglect to consider or undervalue environmental costs and benefits, and leave poorer communities behind, may be especially inappropriate in the flood planning context. Many of the social and environmental benefits that might arise from flood mitigation projects are not quantifiable. For example, public safety goals should surpass economic goals in importance, but are more difficult to quantify for the purposes of a traditional benefit/cost analysis. Similarly, though there has been some effort to quantify the benefits offered by natural ecosystems, environmental factors often are undervalued or altogether ignored in benefit/cost analyses.

When applied in the flood mitigation context, moreover, benefit/cost analyses consistently prove the value of flood mitigation.¹⁹ This finding suggests that a traditional benefit/cost analysis therefore is not a valuable tool for evaluating which projects to select and provides a basis for the TWDB to instead adopt a better, more unbiased way of prioritizing projects.

Bayou City Waterkeeper therefore recommends that the TWDB adopt a framework for making flood planning decisions that diverges from the traditional benefit/cost analysis, and instead identifies a number of non-economic factors that proposed projects must meet to receive priority. As mentioned above, over the last year, when considering how to implement \$2.5 billion funds authorized through a flood bond, the Harris County Flood Control District worked with stakeholders to identify a prioritization framework using the CDC's Social-Vulnerability Index, which recently was approved by the Harris County Commissioners' Court. The TWDB should consult with Harris County and the Harris County Flood Control District and evaluate how this tool, or aspects of this tool, might work in a statewide flood program.

¹⁹ A nationwide study of thousands of benefit/cost analyses for FEMA mitigation projects found that the average ratio is 4:1; that is, on average, benefits from flood mitigation projects are four times higher than costs, no matter the type of project. Adam Rose, et al, Benefit-Cost Analysis of FEMA Hazard Mitigation Grants (July 25, 2006), available at <http://agecon2.tamu.edu/people/faculty/shaw-douglass/fema.pdf>.

If the TWDB proceeds with a benefit/cost analysis, TWDB must:

- value life over property,
- take home-ownership, and the absence of a mortgage, as a positive criteria;
- value working with nature over more engineered solutions, and
- make clear the result of that analysis should not be the sole, determinative factor in deciding on a project or a government action.

How do you think an associated reduction in loss of life should be reflected in such a benefit-cost evaluation?

This factor should be weighted heavily in whatever framework the TWDB adopts.

How should project success be defined?

The TWDB should define success based on the benefits a project purports offers. To illustrate, if a project promises to reduce human injuries and deaths, a project will be successful if it actually reduces human injuries and deaths after specific storm events and over time—the closer to zero, the better.

Issue 5: Neighboring Area Impacts

Should there be an allowance to recommend a flood mitigation project that could result in negative impacts to a neighboring area so long as a flood planning group also incorporates a related but separate project to mitigate that negative impact?

No. TWDB should not allow flooding problems to move from one community to another.

Issue 6: Flood Planning Guidance Principles

Have these principles been crafted to adequately reflect the public interest of the entire state? Are there any that are missing?

First and foremost, we urge the TWDB to center affected communities in this process, move people out of harm's way, and work with--not against--nature. These three principles must drive all the TWDB's decision.

Bayou City Waterkeeper also offers these comments to the principles identified:

In **5)**, the TWDB should acknowledge that climate change will exacerbate the risks identified and instruct regional planning groups and funding applicants to account for climate change in their plans.

In **6)**, the TWDB should allow each regional flood planning group to consider projects for smaller drainage areas where they believe that to be appropriate, based on specific circumstances, public input, and expert advice in the region.

In **7)**, the TWDB should clarify that adverse impacts to neighboring communities only may occur with those communities' informed consent and only after a mitigation plan, including monitoring, is in place—and allow further comment.

In **9)**, as already discussed, the TWDB should consider a framework for choosing projects that diverges from a traditional benefit/cost analyses and allow further comment. If the TWDB chooses to use a benefit/cost analysis, it must define the benefits and costs that must be considered; value life over property, take

home-ownership and the absence of a mortgage as a positive criteria, value working with nature over more engineered solutions, and make clear the results of the analysis are not determinative.

13) should also state “shall include recommended strategies and projects that provide... multiple benefits to communities as well as management of flood risk to people.”

In **14)**, TWDB must define and explain what “balanced consideration of structural and nonstructural flood risk mitigation measures” is and also define what a “nature-based feature” is.

15) and **16)** should be omitted. TWDB should not use funds to build water supply projects such as dams, which often are extremely costly and often diminish water quality downstream and destroy natural systems and the benefits they provide. Instead, TWDB should keep people out of harm’s way to avoid having flooding that kills, injures, or destroys property.

We strongly support **17)**, **18)**, and **19)** shall be based on decision-making that is open to and accountable to the public with full dissemination of planning results except for those matters made confidential by law. We urge TWDB to carefully consider how best to engage affected communities and the public at large at each key phase of planning and implementation. To maximize participation by low-income communities and those working during traditional work hours, the TWDB should consider holding meetings in affected communities outside of traditional work hours (such as evenings or Saturdays), hosting meetings via webinar at a range of times, and provide translation services in meetings and translated documents for all printed materials. To achieve its goals of equity and facilitate protection and projects in the most vulnerable communities throughout the state, the TWDB should evaluate data such as the Social Vulnerability Index from the Center for Disease Control.

For **22)**, rather than “consider natural systems and beneficial functions of floodplains,” the TWDB should change this language so that it must “evaluate, incorporate, and use natural systems and beneficial functions of floodplains.”

For **25)**, the TWDB should omit the phrase “when possible” and instead state “shall, at all times, encourage flood mitigation design approaches that work with rather than against natural patterns and conditions of floodplains.”

For **26)**, the TWDB should further add that a project must not cause any short-term impairment of water quality.

Bayou City Waterkeeper thanks TWDB leadership and staff for their efforts to solicit stakeholder input as you implement the new state flood funding and planning laws. We appreciate the opportunity to submit these comments and would welcome the opportunity to assist you and others in effectively implementing the new legislation. If you have any questions, or if you would like to discuss any issues raised in these comments further, please contact Kristen Schlemmer, Legal Director for Bayou City Waterkeeper, at kristen@bayoucitywaterkeeper.org or 281-501-9630.

Sincerely,

A handwritten signature in black ink that reads "Kristen Schlemmer". The signature is written in a cursive, flowing style.

Kristen Schlemmer

Legal Director

Bayou City Waterkeeper

Houston, Texas

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