



August 30, 2019

Jeff Walker  
Executive Administrator  
Texas Water Development Board  
1700 North Congress Avenue  
Austin, TX 78701

Dear Mr. Walker,

Thank you for your work to keep Texans safe from the dangers of flooding. One in every ten Texans faces moderate or high risk from riverine floods,<sup>1</sup> meaning that, as the Texas Water Development Board noted, flooding affects the “lives and livelihoods of all Texans.”<sup>2</sup> Green Infrastructure is an essential tool in this fight. By setting a minimum of twenty percent of the Flood Infrastructure Funds (FIF) aside for green infrastructure, the Board can play a role in ensuring the safety of Texans for years to come.

GI deserves special attention from the FIF because it (1) reduces the risk associated with local and riverine floods, (2) is cost effective, and (3) has significant secondary benefits, including reducing runoff pollution, protecting natural areas, and providing opportunities for recreation.

Like traditional gray infrastructure, green infrastructure helps manage excess rainwater. However, instead of funneling rainwater into waterways which could potentially flood downstream, GI mitigates floods by allowing stormwater to absorb directly into soil. Rain gardens, green roofs, urban forests and other nature-based strategies can absorb up to 90% of rainwater,<sup>3</sup> preventing it from endangering communities downstream. We know these techniques work: during Hurricane Harvey, the only Bayou that avoided flooding was Sims Bayou, where a GI project had been completed in 2015.<sup>4</sup> Other GI techniques include non-engineered solutions; conserving and restoring natural spaces allows them to hold excess rainwater and prevent floods. Healthy wetlands, for example, can retain up to a million gallons of water per acre.<sup>5</sup>

---

<sup>1</sup> Texas Water Development Board, State Flood Assessment: Report to the 86th Texas Legislature, January 2019, archived at [web.archive.org/web/20190828160358/http://www.texasfloodassessment.com/doc/State-Flood-Assessment-report-86th-Legislation.pdf](http://web.archive.org/web/20190828160358/http://www.texasfloodassessment.com/doc/State-Flood-Assessment-report-86th-Legislation.pdf)

<sup>2</sup> Texas Water Development Board, Informed Flood Planning for Texas, August 2019, archived at [web.archive.org/web/20190828160118/http://www.twdb.texas.gov/newsmedia/featured/stories/2019/08/index.asp](http://web.archive.org/web/20190828160118/http://www.twdb.texas.gov/newsmedia/featured/stories/2019/08/index.asp)

<sup>3</sup> William J. Taylor, Taylor Aquatic Science and Policy, White Paper for Stormwater Management Program Effectiveness Literature Review: Low Impact Development Techniques, April 2013, archived at [web.archive.org/web/20170110230133/http://www.ecy.wa.gov/programs/wq/psmonitoring/ps\\_monitoring\\_docs/SWworkgroupDOCS/LIDWhitePaperFinalApril2013.pdf](http://web.archive.org/web/20170110230133/http://www.ecy.wa.gov/programs/wq/psmonitoring/ps_monitoring_docs/SWworkgroupDOCS/LIDWhitePaperFinalApril2013.pdf)

<sup>4</sup> Christof Spieler, To fight flooding in Houston, we have to think big, November 2017, archived at [web.archive.org/save/https://www.houstonchronicle.com/local/gray-matters/article/To-fight-flooding-in-Houston-we-have-to-think-big-12362463.php](http://web.archive.org/save/https://www.houstonchronicle.com/local/gray-matters/article/To-fight-flooding-in-Houston-we-have-to-think-big-12362463.php)

<sup>5</sup> Environmental Protection Agency, Wetlands: Protecting Life and Property from Flooding (factsheet), May 2006, archived at [web.archive.org/web/20170109212024/hps://www.epa.gov/sites/production/files/2016-02/documents/flooding.pdf](http://web.archive.org/web/20170109212024/hps://www.epa.gov/sites/production/files/2016-02/documents/flooding.pdf)

Importantly for the FIF, the benefits of GI come at a surprisingly low cost. Congress estimates that a given GI project costs up to thirty percent less to build, and twenty-five percent less to maintain than the equivalent new gray infrastructure project.<sup>6</sup> The city of Houston calculated that locally, construction costs would decrease by an average of two percent, and maintenance by thirty-four percent.<sup>7</sup> This frees up more FIF funding for other projects, increasing the number of lives the FIF can protect.

The state legislature recognizes these benefits and, in creating the FIF, specifically stated that the funds should be partially dedicated to “nature-based” solutions including GI, conservation, and rehabilitation of natural spaces.<sup>8</sup> In order to make sure such investments are made, we urge you to set aside at least twenty percent of FIF funds for green projects.

This follows precedents set by both the State Water Implementation Fund for Texas (SWIFT), and the Clean Water State Revolving Fund (CWSRF), which currently set aside 20% and 10% respectively of their revenue for green projects.<sup>9,10</sup> Around the state, green infrastructure projects help to mitigate the risk of floods, prevent water pollution, and keep our cities cool and beautiful.

In your statement requesting stakeholder feedback, you asked stakeholders to give input on what types of projects should be prioritized under the FIF program. Considering the broad benefits of green infrastructure, we urge you to create green, nature-based flood solutions. We strongly support the inclusion of a diverse benefit criteria for projects funded by the FIF, and urge you to consider a twenty percent green project reserve as a way to help the fund meet that criteria.

Sincerely,



Anna Farrell-Sherman  
Clean Water Associate  
Environment Texas Research and Policy Center

---

<sup>6</sup> Claudia Copeland, Congressional Research Service, Green Infrastructure and Issues in Managing Urban Stormwater, 2 May 2016, archived at [web.archive.org/ web/20170110230231/https://fas.org/sgp/crs/misc/R43131.pdf](https://web.archive.org/web/20170110230231/https://fas.org/sgp/crs/misc/R43131.pdf)

<sup>7</sup> City of Houston, Houston Incentives for Green Development, August 2019, <http://www.houstontx.gov/igd/documents/igd-report-final.pdf>

<sup>8</sup> Texas State Senate Bill 7, Legislative Session 86, <https://capitol.texas.gov/tlodocs/86R/billtext/pdf/SB00007F.pdf#navpanes=0>

<sup>9</sup> Shannon Harris, What the Minimum 20 Percent Conservation and Reuse Mandate in the SWIFT Process in Texas Means for Sustainably Designed Water Methods,

[https://web.archive.org/web/20190828214536/https://sustainability.utexas.edu/sites/sustainability.utexas.edu/files/SWIFT\\_ShannonHarris.pdf](https://web.archive.org/web/20190828214536/https://sustainability.utexas.edu/sites/sustainability.utexas.edu/files/SWIFT_ShannonHarris.pdf)

<sup>10</sup> George Ames, Change to the Clean Water State Revolving Fund Green Project Reserve Guidance, February 2017,

[https://web.archive.org/web/20190828214939/https://www.epa.gov/sites/production/files/2019-05/documents/gpr\\_guidance\\_change\\_memo\\_2-21-17.pdf](https://web.archive.org/web/20190828214939/https://www.epa.gov/sites/production/files/2019-05/documents/gpr_guidance_change_memo_2-21-17.pdf)