

POST

# Flood/Hurricane . . . and Covid-19???

March 17, 2020

2 emergencies at once? Is Houston prepared? Enter artificial intelligence.



## IS HOUSTON PREPARED?

Enter Artificial Intelligence.

Ceres AI met with Houston Mayor Pro Tem Martin and Rep. Dan Huberty on the Proposed Diluvia Flood AI Intelligence System

After meeting with Ceres AI, Rep. Dan Huberty and Mayor Pro Tem Martin asked Houston business leadership to take the lead in creating a flood intelligence system.

**Read Rep. Huberty's letter.** ([http://r20.rs6.net/tn.jsp?f=001DKbKylbAfTPRoc735SW6wGspU13z9rgiy56DRlofdUNuHPbsYHwIKV-DMFCco2xpGd-yqLvjfm4OUoReG4fmSga4Bxc4leG\\_XGBqd9vkdvVnmk41M8WMwgss6KzjH8qnhKkYo42lrimWSSvPtKox7Ya9vHL3d4OEgBPzSLMBoPAMz1HdPy5G\\_XDIbwqkGderhUKFzQbC9AiFO-JvgkevgucDfeE25tMdIG3-zHUNIo=&c=&ch=](http://r20.rs6.net/tn.jsp?f=001DKbKylbAfTPRoc735SW6wGspU13z9rgiy56DRlofdUNuHPbsYHwIKV-DMFCco2xpGd-yqLvjfm4OUoReG4fmSga4Bxc4leG_XGBqd9vkdvVnmk41M8WMwgss6KzjH8qnhKkYo42lrimWSSvPtKox7Ya9vHL3d4OEgBPzSLMBoPAMz1HdPy5G_XDIbwqkGderhUKFzQbC9AiFO-JvgkevgucDfeE25tMdIG3-zHUNIo=&c=&ch=)) **Read**

**Mayor Pro Tem Martin's letter.** ([http://r20.rs6.net/tn.jsp?f=001DKbKylbAfTPRoc735SW6wGspU13z9rgiy56DRlofdUNuHPbsYHwIAP1nylQS\\_O6otnEE7KTEYXw4Y2rBT4VSSzloHbIwKtgn2Tnsy5\\_ZRJ8EkrHNKuokvrf-eUWzir-8IMaDp33eip900L-EqAFLfdB-qbcuuQwXu4VcmyLLmmzI1qT5IRjWRowtsaN4OgZNxhAjrHjJ\\_J1IaN-Mbokb7nhs6cQktLle7jqUoQJtHI=&c=&ch=](http://r20.rs6.net/tn.jsp?f=001DKbKylbAfTPRoc735SW6wGspU13z9rgiy56DRlofdUNuHPbsYHwIAP1nylQS_O6otnEE7KTEYXw4Y2rBT4VSSzloHbIwKtgn2Tnsy5_ZRJ8EkrHNKuokvrf-eUWzir-8IMaDp33eip900L-EqAFLfdB-qbcuuQwXu4VcmyLLmmzI1qT5IRjWRowtsaN4OgZNxhAjrHjJ_J1IaN-Mbokb7nhs6cQktLle7jqUoQJtHI=&c=&ch=))



TEXAS HOUSE OF REPRESENTATIVES  
DAN HUBERTY

February 13, 2020

Bob Harvey  
President and Chief Executive Office  
Greater Houston Partnership  
701 Avenida De Las Americas #900  
Houston, TX 77010

Dear Bob,

I am writing to ask you to lead the development of a Flood Intelligence System for the Greater Houston Area.

Artificial intelligence, IoT, and remote-sensing technologies are advancing. The business community has unique knowledge and access to these leading-edge technologies. The business community also has unique abilities in helping bring together various private sector and diverse governmental interests around technological innovation—especially where time is of the essence.

Attached is a proposal that was recently presented to me by Steve Reeves and Jed Anderson. Google and other AI-based companies have similar flood applications in development or deployed in other parts of the world ([see https://www.blog.google/products/search/helping-keep-people-safe-ai-enabled-flood-forecasting/](https://www.blog.google/products/search/helping-keep-people-safe-ai-enabled-flood-forecasting/)).

Thank you for your review and consideration.

Sincerely,

A handwritten signature in black ink that reads "Dan Huberty".

Representative Dan Huberty

cc: Chase Kronzer, Director, Public Policy, Greater Houston Partnership

Attachment

DISTRICT OFFICE:  
4501 MAGNOLIA COVE, SUITE 201 A  
KINGWOOD, TEXAS 77345  
281-360-9410

CAPITOL OFFICE:  
P.O. Box 2910  
AUSTIN, TEXAS 78768-2910  
512-463-0520



**DAVE MARTIN**  
Council Member  
District E

March 16, 2020

Bob Harvey  
President and Chief Executive Officer  
Greater Houston Partnership  
701 Avenida de las Americas #900  
Houston, TX 77010

Dear Mr. Harvey,

I am writing to encourage you to pursue the development of a Flood Intelligence System for the Greater Houston Area.

Artificial intelligence and remote-sensing technologies are constantly evolving and advancing. It's my belief that taking advantage of these evolving technologies is a logical investment for the benefit of the greater Houston area.

The business community has unique insight and access to these leading-edge technologies and the capability to bring together various private sector and diverse governmental interests around technological innovation.

Attached is a proposal that was recently presented to me by Steve Reeves and Jed Anderson. I encourage you to take this information into consideration.

Should you have any questions, please contact my office at 832-393-3008.

Sincerely,

A handwritten signature in cursive script that reads "Dave".

Dave Martin  
Mayor Pro Tem  
Council Member  
District E

# Diluvia

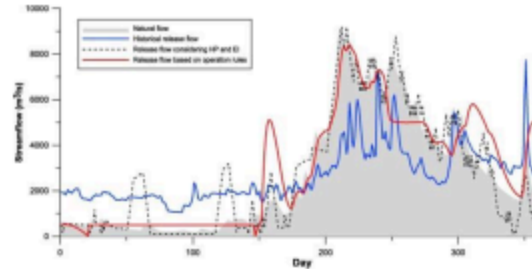
A Flood AI project for Houston, by CERES Environmental AI

**Overview.** This document is a description of Diluvia, a new product by CERES Environmental AI designed to use AI to prevent flooding and optimize water management in southeast Texas.

## Dynamic Predictive Modeling

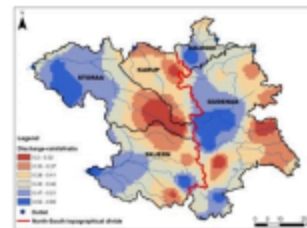
We'll make more accurate predictions than have ever been possible before, using state-of-the-art AI forecasting tools.

Our flood forecasts are based on a distributed hydrologic model, which is physics-based and event-driven, and proven to outperform other commonly used runoff prediction models. We update the forecasts in real-time based on the latest conditions. We also make a variety of related forecasts, of weather events, crowd conditions, traffic flow, and property damage.



## Flow Optimization

We'll consider the greater Houston area holistically, and design and manage optimal water flow and storage based on local regulations, intentions, and conditions. Our optimization process will include recommendations for flow control, preventive maintenance, and infrastructure development, as well as real-time emergency protocol recommendations. We'll think long-term, preparing for population growth and water use trends, and also short-term, quickly making the right decisions in the minutes and seconds when they're most needed.



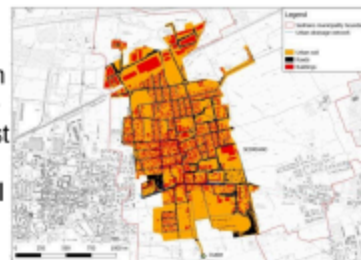
## Crisis Simulation and Planning

We'll use agent-based modeling to simulate actions and responses of chaotic systems under crisis conditions, to create intelligent, evidence-based crisis plans. Our tools will enable the optimal design of evacuation routes and protocols, and give an understanding of the range of possible outcomes and their likelihood. We'll use the latest computational models of autonomous agents, incorporating AI to simulate the behavior of people and groups and prevent irrationality.

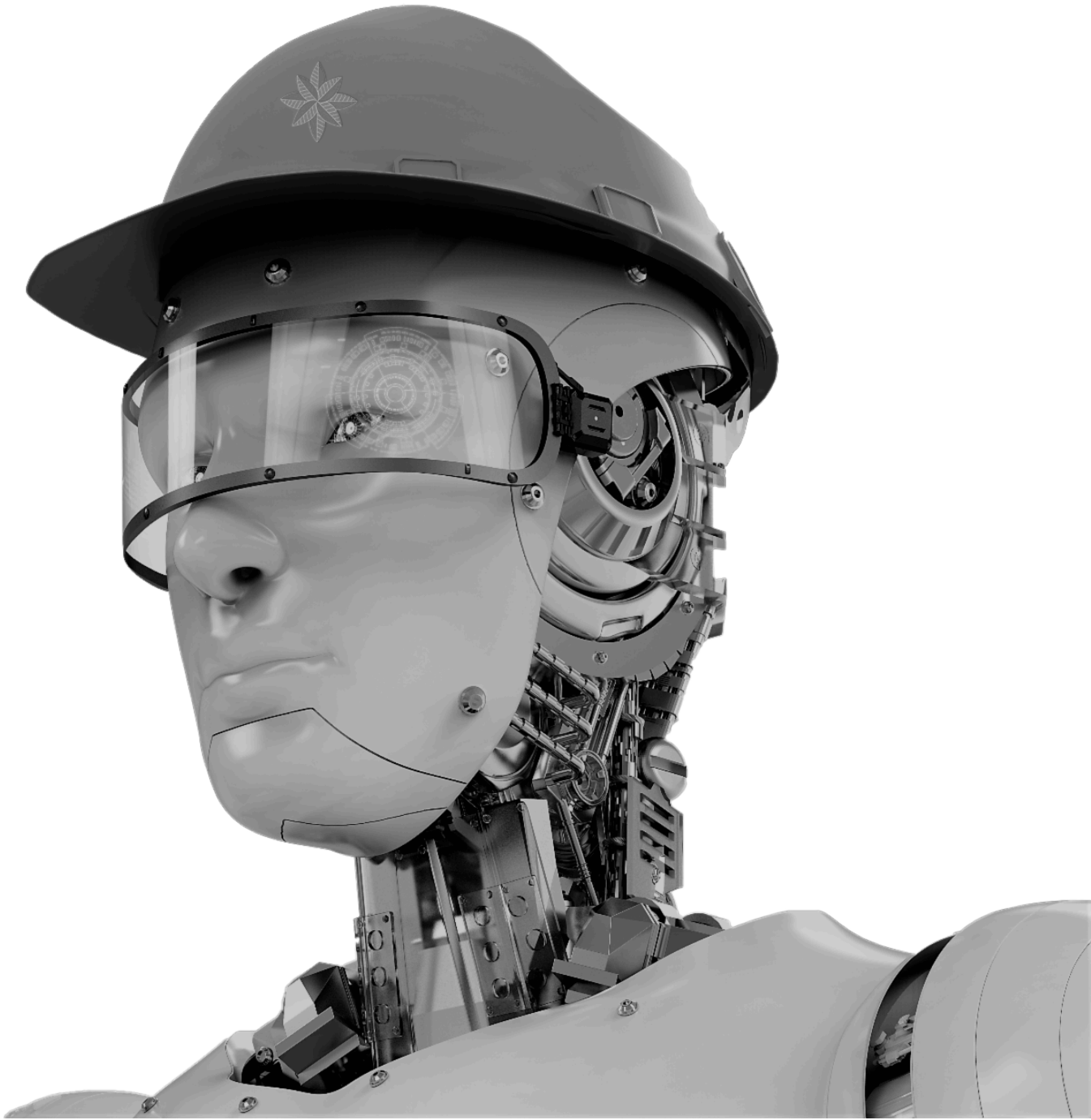


## Information Sharing and Multiparty Coordination

We'll make information sharing and coordination easy with interactive visualizations, central data repositories, facilitated open communication, and real-time alerts. Our web applications will be easy for planners and local administrators to access to get the latest crucial information about current conditions and forecasts. By gathering decision-makers to a centralized, user-friendly app, we'll create a hub that enables better coordination and communication.







---“We’ve estimated the cost of the Diluvia Flood Intelligence System prototype at about \$500k and about 6 months build-time. Google has a similar flood intelligence project in developmen ([http://r20.rs6.net/tn.jsp?f=001DKbKylbAfTPRoc735SW6wGspUl13z9rgiy56DRlofdUNuHPbsYHwIAP1nylQS\\_O6\\_1LQD4fzTw66fKZFtQYCJMJHPfuptWuuWrq2DOc5CQB7zGdc6rD3ycJtlQeTriqOrT2worfVuab3eUi6rJWtqHLqjMWaFocVSGquWTww1qBEI5C1FCLbJy\\_6AHj2xqLXOI9bYKaPVjk2atnjRQBWA==&c=&ch=\)t](http://r20.rs6.net/tn.jsp?f=001DKbKylbAfTPRoc735SW6wGspUl13z9rgiy56DRlofdUNuHPbsYHwIAP1nylQS_O6_1LQD4fzTw66fKZFtQYCJMJHPfuptWuuWrq2DOc5CQB7zGdc6rD3ycJtlQeTriqOrT2worfVuab3eUi6rJWtqHLqjMWaFocVSGquWTww1qBEI5C1FCLbJy_6AHj2xqLXOI9bYKaPVjk2atnjRQBWA==&c=&ch=)t)). Whether its Google’s system or our system, we would like to get to work as quickly as possible since Houston is only a few months away from the start of hurricane season.”—Jed Anderson, CEO, Ceres AI

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Original source: Constant Contact campaign

Markdown source: <https://jedanderson.org/posts/flood-hurricane-and-covid-19.md> (<https://jedanderson.org/posts/flood-hurricane-and-covid-19.md>).

Source on GitHub: [/src/content/posts/flood-hurricane-and-covid-19.md](https://github.com/jedanderson432/jedanderson-site/blob/main/src/content/posts/flood-hurricane-and-covid-19.md) (<https://github.com/jedanderson432/jedanderson-site/blob/main/src/content/posts/flood-hurricane-and-covid-19.md>).