

In the United States Court of Federal Claims

No. 17-9002

Filed: April 22, 2026

IN RE DOWNSTREAM ADDICKS AND
BARKER (TEXAS)
FLOOD-CONTROL RESERVOIRS

THIS DOCUMENT APPLIES TO:

ALL CASES

OPINION & ORDER

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SMITH, Senior Judge

This case concerns whether government-induced flooding created a compensable taking under the Fifth Amendment of the United States Constitution. Previous courts have answered in the affirmative. But in finding liability, each taking depended on specific factual findings. Unique to this case, the flooding here did not occur merely from the construction or operation of a government flood control project. Rather, flooding arose from the government acting in accordance with a discrete regulation that required mandatory releases of impounded water as part of its flood control efforts.¹

In August 2017, Hurricane Harvey (“Harvey”) devastated the Houston metropolitan area. Over a four-day period, Harvey poured approximately 35 inches of rain around Houston. Residential and commercial property owners suffered significant damage to their properties and interruption to their daily lives. Many affected property owners resided or conducted business downstream of the Addicks and Barker Dams (“Reservoirs” or “Dams”). Historically, the Dams were designed to protect downstream properties from major flooding events. Over 80-plus years, the Dams have reduced flooding and prevented billions in damage. The United States Army Corps of Engineers (the “Corps” or “defendant”) operates both Dams and aggregated its policies into a Water Control Manual (“Water Manual”). In particular, Section 7-05(b) provides for “Induced Surcharge Flood Control Regulation” (“Induced Surcharges”). When pool levels and the rate of

¹ The Court wishes to note its appreciation for the scholarship and legal analysis by late Senior Judge Charles F. Lettow. He issued a recently affirmed decision in a directly related case to this matter.

rise at each Dam exceed a certain elevation, the Corps will automatically release stored water in connection with schedules found elsewhere in the Water Manual.

From August 28, 2017, through mid-September 2017, the Corp flooded private property through Section 7-05(b). Following Harvey, the Court began receiving complaints from Houston-area residents alleging that defendant's actions violated the Takings Clause of the Fifth Amendment. To promote judicial efficiency, plaintiffs in this case are a group of 12 test properties selected to represent the Downstream Sub-Docket. Their properties sit at different distances from Addicks and Barker. The Court initially held that plaintiffs failed to identify a cognizable property interest and granted defendant's motion to dismiss. *In re Downstream Addicks*, 147 Fed. Cl. 566 (2020) (subsequent history omitted). However, the United States Court of Appeals for the Federal Circuit reversed and remanded the case to consider whether plaintiffs' takings claims may prevail or if defendant may avoid paying just compensation. *Milton v. United States*, 36 F.4th 1154 (2022). This opinion addresses whether plaintiffs established liability.

On remand, the parties participated in a new round of summary judgment briefing under Rule 56 of the Court of Federal Claims ("RCFC"). See ECF No. 262; ECF No. 266; ECF No. 277; ECF No. 281. Plaintiffs argue that defendant's actions constituted both a temporary and permanent physical taking. They also allege that defendant's actions caused more flooding to their properties than if defendant had never released impounded water from the Dams. Furthermore, plaintiffs asserted that defendant cannot protect itself under the necessity and relative benefits doctrines. In response, defendant asserted that factual disputes preclude a finding that a temporary taking occurred and that Section 7-05(b) does not create a permanent right of access to plaintiffs' properties. Accordingly, the infrequent nature of induced surcharge flooding makes this action lie in tort as opposed to a taking. In addition, defendant argued that plaintiffs would have experienced more flooding to their properties had it never built Addicks and Barker. It also contends that the "*Hardwicke* exception" is inapplicable and that the Court must consider all of defendant's flood risk-reducing measures undertaken in this flood-control project. Lastly, defendant believes that an actual emergency posed an imminent danger to the integrity of Addicks and Barker such that the necessity doctrine shields it from liability. And as a fallback position, the relative benefits afforded to plaintiffs outweigh any damage that resulted from flooding.

Following briefing, the parties agreed that factual disputes necessitated a limited trial to resolve certain issues. After holding trial in Houston, Texas, in October 2024 and which concluded in Washington, D.C., in April 2025, the Court may now render its decision.

I. BACKGROUND

A. History Of The Buffalo Bayou And Construction Of The Dams.

The Buffalo Bayou is located in eastern Waller County and western Harris County in Texas and runs approximately 75 miles. Def. Ex. 1, at 2008.² After passing through Houston, the Bayou

² This opinion draws its factual references from each parties' summary judgment record, their Joint Stipulation of Facts filed before trial, their trial exhibits, and the trial transcript. Citations from plaintiffs' summary judgment record will include the docket number, volume number, and a corresponding appendix page number. References from defendant's summary judgment record will include the exhibit number

joins the Houston Shipping Channel, which feeds into the San Jacinto and Galveston Bays and eventually into the Gulf of Mexico. Pls.’ 266-4, at A2210. Between 1845 and 1935, Houston experienced six major flooding events. Def. Ex. 56; Def. Ex. 57. Two storms in 1929 and 1935 resulted in flooding that cost millions of dollars in damage, several lives lost, and disruption to Houston’s local economy. Def. Ex. 1, at 2010–11; Def. Ex. 4, at 2215.

In response, Congress passed the Rivers and Harbors Act of June 20, 1938, which commissioned the Corps to study flood protection along the Buffalo Bayou. Jt. Stip. of Facts, ECF No. 548, at ¶¶ 2–3; Def. Ex. 1, at 2005; *see* Pub. L. No. 75-685, 52 Stat. 802 (1938). The Act’s subsequent modification by the Flood Control Act of 1939 (“FCA”) then authorized the construction of Addicks and Barker dams and their corresponding reservoirs. ECF No. 548, at ¶ 2; Def. Ex. 3, at 2140–41; Def. Ex. 5, at 2247. As part of the Buffalo Bayou and Tributaries Project, defendant installed this flood control program “to provide for complete control of floods on the Buffalo Bayou watershed” and to protect Houston and its shipping channel “against the estimated probable maximum storm.” Def. Ex. 1, at 2007; *see also id.* at 2140–41.

Construction for Barker began in February 1942 and finished in 1945. Def. Ex. 4, at 2171; Def. Ex. 6, at 2403. Barker’s earthen embankment measures approximately 71,900 feet or 13.6 miles long and the drainage area for its watershed spans 130 square miles.³ ECF No. 548, at ¶¶ 9, 16. The top of Barker’s dam reaches 113.1 feet high, and the ends of its embankment also reach 104 feet. JX2, at USACE016309. Its spillway design flood—the maximum amount of water defendant designed Barker to handle—stands at 108 feet. JX 3, at USACE019885. Thereafter, construction at Addicks started in 1946 and concluded in 1948. Def. Ex. 4, at 2171; Def. Ex. 6, at 2403. Addicks’ embankment runs 61,166 feet or 11.6 miles long and created a 136 square mile watershed. ECF No. 548, at ¶¶ 8, 13. The top of Addicks reaches 121 feet and the ends of its embankment terminate at 112 feet on its west end. JX 2, at USACE016308. Furthermore, its spillway design flood stops at 115 feet. JX 3, at USACE019883. Both dams are located approximately 17 miles west of Houston. Pls.’ 266-1, at A174. During trial, the Court visited and inspected both Dams.

Initially, defendant designed the Dams to include four ungated conduits and one gated conduit that would permit a combined uncontrolled discharge of 15,700 cubic feet per second (“cfs”). Def. Ex. 5, at 2248, 2272; Def. Ex. 6, at 2415. In 1948, the Corps gated two of the four ungated conduits which lowered projected uncontrolled releases to 7,900 cfs. Def. Ex. 6, at 2415. By 1963, defendant gated all remaining exposed conduits due to increased urbanization during the 1940s and 1950s. Pls.’ 266-1, at A310, A312; Pls.’ 266-5, at A2661. Total releases, “plus local runoff downstream of the dams, would start at 4,000 cfs and be gradually increased to 6,000 cfs except under emergency conditions.” Def. Ex. 5, at 2249. But continued development in the 1970s

followed by a page number. All citations to the parties’ stipulation of facts come from ECF No. 548 and will include specific paragraph numbers. Plaintiffs’ trial exhibits will be abbreviated as “PX”; defendant’s trial exhibits will be abbreviated as “DX;” and Joint Exhibits will be referred to as “JX.” As a general rule, the Court uses both summary judgment records to dispose of issues raised by motion and trial materials for issues argued at trial.

³ Elevations at each Dam and corresponding flows within the Reservoirs are computed with respect to height above sea level. The Corps currently uses the North American Vertical Datum of 1988 (“NAVD88”) to represent these figures.

made downstream properties susceptible to first-floor flooding if flows exceeded 3,000 cfs. *Id.* at 2249–51. In 1984, the Corps further reduced combined releases from both Dams to 2,000 cfs. Pls.’ 266-6, at A2714. It also raised the top of each Dam and added three feet of armor plating with roller-compacted concrete at their ends. Pls.’ 266-1, at A310, A312. While defendant contemplated increasing allowable releases in the 1990s, the Corps reaffirmed that the “gates are kept closed and under surveillance as long as needed to prevent flooding below the reservoirs.” Pls.’ 266-7, at A3117; *see also* Pls.’ 266-5, at A2681. In addition, Addicks and Barker have two auxillary spillways at the ends of each Dam. Trial Tr. at 48:1–5, 92:17–23. As the Dams fill up and approach their spillway design capacities, stored water flanks around the ends and into an auxillary spillway, akin to an overflow hole in a sink. *Id.* at 88:7–90:1, 92:1–23. Those spillways terminate into the natural ground and help avoid overtopping and potential dam failure during major storms. *Id.* at 91:9–18; Pls.’ 266-4, at A2200.

Defendant considered purchasing downstream land in anticipation of increased flooding events. Pls.’ 266-5, at A2664. It never acquired any properties due to “astronomical” costs and its belief that acquisition “of such valuable and extensively developed areas . . . would be highly unfavorable and unacceptable” to Houston residents. *Id.* As of 2009, “[n]ine out ten and eight out of ten top pool events” have occurred at Addicks and Barker since the early 1990s. Pls.’ 266-1, at A180. Today, Addicks and Barker are surrounded by residential and commercial developments, which also face risks of flooding. *Id.* at A174. Both Dams “are classified as high hazard dams due to the probable loss of life and impacts on economic, environmental, and lifeline interests in the event of a failure.” JX 3, at USACE019768.

B. The Water Manual Of 2012 And The Corps’ Emergency Action Plan.

In connection with gating all remaining conduits, defendant consolidated its operations into a Water Manual in 1962. Defendant updated the Manual in 2012, which was in effect during Hurricane Harvey. ECF No. 548, at ¶¶ 59, 63, 70. The Corps enacted the Water Manual “to document a definite plan of regulation, to establish a reference source for higher authority, as well as to guide present and future personnel concerned with, or responsible for, regulation of the reservoirs.” *Id.* at ¶ 60. The 1962 Manual contained an “Emergency regulation” which required a Dam Tender to report and stay in communication with the District Hydrologist. Def. Ex. 2, at 2084. That regulation further dictated that when “a reliable prediction of inflow hydrographs are not available,” outflows will be determined by two “plates” that contain release schedules based on different elevations. *Id.* If conditions satisfied those plates, releases “[would] be made regardless of channel capacities downstream.” *Id.*

According to the 2012 Water Manual, “[t]he chief regulation problem associated with Addicks and Barker Reservoirs has been the continually diminishing downstream non-damaging channel capacity due to encroachment.” Pls.’ 266-1, at A26. Despite this concern, both Dams largely prevented flood damage by reducing the combined discharge rate to further accommodate downstream development. *Id.* at A35. In total, Addicks and Barker have saved Buffalo Bayou residents billions in damages. *Id.* at A168. During normal flood control operations, “the gates are ‘open’ which allows normal water flows to pass through the gates when the reservoirs are empty and flooding on Buffalo Bayou downstream of the dams is not occurring or expected.” ECF No. 548, at ¶ 65. Corps members will close the floodgates “when there is a risk of downstream flooding

due to rainfall over the watersheds either above or below the reservoirs.” *Id.* at ¶ 67. The Water Manual further requires defendant to “[k]eep the gates closed and under surveillance as long as necessary to prevent flooding below the dams.” Pls.’ 266-1, at A35. However, operations shift from normal to Induced Surcharges under the following conditions:

Induced Surcharge Flood Control Regulation. At any time the reservoir pool equals or exceeds 101 feet NAVD 1988 in Addicks Reservoir and 95.7 feet NAVD 1988 in Barker Reservoir monitoring of pool elevation should immediately ensue to determine if inflow is causing pool elevation to continue to rise. If inflow and pool elevation conditions dictate, reservoir releases will be made in accordance with the induced surcharge regulation schedules shown on plates 7-03 and 7-04. The gates should remain at the maximum opening attained from the induced surcharges regulation schedules until reservoir levels fall to elevation 101 feet NAVD 1988 in Addicks and 94.9 NAVD 1988 feet in Barker. Then, if the outflow from both reservoirs when combined with the uncontrolled runoff downstream is greater than channel capacity, adjust the gates until the total discharges do not exceed channel capacity and follow the normal operating procedures.

Id. at A50. When invoked, releases from the Induced Surcharges flow downstream and into the Buffalo Bayou region. *Id.* at A19–20, 33; ECF No. 548, at ¶ 41. Under Section 7-05(b), the amount of impounded water released is determined by another set of plates within the Water Manual based on elevation and the rate of rise in each Dam. Pls.’ 266-1, at A50. Once conditions allow for a return to normal flood control operations, impounded water is released at lesser rates until the Reservoirs are empty. *See* ECF No. 548, at ¶ 69.

Corps operations also include an Emergency Action Plan (“EAP”) which was in effect during Harvey. *Id.* at ¶ 71. The Water Manual references the EAP, but notes the latter is a “stand-alone document” that defendant may refer to. JX2, at USACE016341, USACE016348. In practice, the EAP identifies “emergencies” that could threaten dam failure and non-breach emergencies that could arise from normal operations, such as reservoir pools that exceed government owned land. Trial Tr. at 581:6–13; JX 3, at USACE019764. It also provides an array of options that defendant may use when addressing potential or actual emergencies. JX 3 at USACE019817–25. The EAP lists two phases of Extended Watch that imposes inspection protocol when pool levels exceed certain elevational thresholds. *Id.* at USACE019854–55. It also includes three emergency levels with corresponding response measures. *Id.* at USACE019775–76, USACE019817–25. Each Emergency Level provides for its own set of release schedules. *Id.* at USACE019827–28. Only Emergency Level 3 addresses situations when dam failure “is judged to be imminent or in progress.” *Id.* at USACE019828. Both parties stipulated that defendant acted in accordance with the Water Manual, not the EAP, during Harvey. ECF No. 548, at ¶ 80.

C. Hurricane Harvey And The Ensuing Flooding.

On August 11, 2017, a tropical wave moved westward across the Atlantic Ocean and into the Caribbean Sea. *Id.* at ¶ 72. That tropical wave then traveled into the Gulf of Mexico and became upgraded to a tropical depression. *Id.* On August 22, 2017, Corps District Commander Colonel Lars Zetterstrom issued a Declaration of Emergency in Galveston County in anticipation of what became Harvey. *Id.* at ¶ 73. The governor of Texas issued his own proclamation of disaster the next day. *See* Def. Ex. 41, at 3708–11. On August 25, 2017, President Trump, through the Federal Emergency Management Agency (“FEMA”), issued a federal disaster declaration for the same areas, including Harris County. *See generally* Def. Ex. 46. Colonel Zetterstrom’s emergency declaration activated the Addicks and Barker Emergency Coordination Team (“ABECT”) which began moving key personnel in place to monitor the impending storm. Trial Tr. at 584:6-14, 653:12-21. ABECT and defendant used the Corps Water Management System Forecasts (“CWMS”) to track Harvey’s progress. Def. Ex. 9–16.

Before Harvey, both Dams operated under “Normal Flood Control Regulation” with “dam gates set at standard settings that allowed the daily reservoir inflows to pass through the dams and into Buffalo Bayou.” ECF No. 548, at ¶ 75. Around 10:00 p.m. on August 25, Harvey made landfall along the Texas coast as a Category 4 Hurricane. *Id.* at ¶¶ 72, 74. Harvey then weakened into a tropical storm but stalled over Houston and Harris County for four days. Pls.’ 266-8, at A3134. Based on projected rainfall and in compliance with the Water Manual, defendant closed the floodgates at each Dam to reduce downstream flooding. ECF No. 548, at ¶ 76. By August 27, 2017, pool levels behind both Dams reached Stage 2 Extended Watch conditions under defendant’s EAP. *Id.* at ¶ 77. At Stage 2, Corps personnel began monitoring the Dams’ performance. *Id.* That same day, pool waters at Barker exceeded government-owned land and Addicks soon followed on August 28. *Id.* at ¶¶ 78–79.

Starting on August 25, 2017, CWMS predicted 23 inches of precipitation and that pool elevations would exceed government-owned land at both Dams by August 28. Def. Ex. 9, at 2598. CWMS further forecasted peak flows of 105 feet at Addicks and approximately 100 feet at Barker. *Id.* The next day, CWMS estimated that each Dam’s watershed would receive 30 inches of rain and “the reservoirs are expected to exceed record pools.” Def. Ex. 10, at 2604. At that time, defendant did not expect “to make mandatory releases for surcharge operations.” *Id.* However, the Corps changed its tune on August 27, 2017, when CWMS noted that “mandatory releases are expected to be necessary . . . at Addicks later tonight and at Barker on Wednesday.” *See* Def. Ex. 11, at 2610. CWMS forecasted that peak flows around the ends of Addicks’ auxillary spillways would reach 6,000 cfs but such flows would only flank around the ends of Barker at less than 100 cfs. *Id.* Despite ordering the Induced Surcharges, Colonel Zetterstrom confirmed that Addicks and Barker “continue to perform as they were designed to do, which is to protect against flooding in downtown Houston and the Houston Ship Channel.” Def. Ex. 12.

At around midnight on August 28, 2017, defendant invoked Section 7-05(b) and began making surcharge releases “due to the speed at which the pools have been rising.” Def. Ex. 13, at 2619. The watershed had already received approximately 25 to 28 inches of rain with future forecasted amounts “in flux.” *Id.* at 2619. The following day, CWMS reported that defendant was releasing 2,600 cfs of impounded water from Addicks and 3,100 cfs from Barker. Def. Ex. 14, at

2627. Defendant made clear that it expected to increase surcharges to 4,000 cfs at each Dam. *Id.* By August 30, 2017, both Dams experienced peak flows, with Addicks releasing 7,500 cfs and Barker releasing 6,300 cfs of impounded water that totaled 13,800 cfs. Def. Ex. 15, at 2634; Def. Ex. 16, at 2642. CWMS also noted that “due to the increased releases from the dam yesterday and less rain falling than was forecasted, Addicks is expected to peak today before the emergency spillway is activated.” Def. Ex. 15, at 2634. Surcharges continued at 7,000 cfs at Addicks and 6,300 cfs at Barker and CWMS forecasted that surcharges would continue for at least ten days. Def. Ex. 16, at 2642. The Induced Surcharges Releases concluded on September 16, 2017, when normal operations resumed. *See* Def. Ex. 58, at 3876. Both Dams did not fully drain until mid-October 2017. Def. Ex. 26, at 3148.

In total, Harvey poured around 32-35 inches of rain over Addicks and Barker’s watershed. ECF No. 548, at ¶ 91. According to the Harris County Flood Control District,⁴ areas within the Barker watershed received 27 to 36.3 inches of rain and land falling within the Addicks watershed received anywhere from 29.6 to 33.2 inches of precipitation. *Id.* at ¶ 99. As of 2022, Harvey sat behind Hurricane Katrina as the second costliest storm in United States history. *See generally* Def. Ex. 47. In its wake, sixty-eight people died, and the National Hurricane Center estimated that the Houston area suffered \$125 billion in damages. Def. Ex. 25, at 3118. Addicks set a new pool of record at 109.09 feet NAVD 1988. *Id.* at 3119–20. Barker also reached a new pool of record of 101.56 feet NAVD 1988. *Id.* Defendant estimated that dam failure would have placed 600,000 lives at risk and caused approximately \$21 billion in damages. Trial Tr. at 331:2–333:3.

D. Plaintiffs’ Acquisition And Descriptions Of Their Properties.

Plaintiffs all acquired their properties between 1976 and 2015. Pls.’ 266-2, at A458–92; *see also* ECF No. 548, at ¶¶ 24–35. Their properties are located within the Buffalo Bayou watershed. ECF No. 548, at ¶ 23. Defendant does not retain any ownership interests in plaintiffs’ properties. *Id.* at ¶103. Most plaintiffs reported that their properties experienced no flooding at their properties until Harvey. *See* Pls.’ 266-2, at A599–625. Some testified that their properties flooded beforehand, but to a much lesser extent when compared to Harvey. *Id.* at A626–60. A more comprehensive description of each property follows:

850 Silvergate Drive, Houston, Texas 77079 (“Milton property”). Arnold and Virginia Milton purchased their home in 1978. ECF No. 548, at ¶ 32. Mrs. Milton testified that their property had not flooded prior to Harvey, and that “it never had a drop of water from any thunderstorm, hurricane, or tropical storm.” Pls.’ 266-2, at A514. The Milton’s alleged that flooding at their residence began on August 28, 2017, and remained until September 10, 2017. *Id.* at A1123. When he woke up on August 28, Mr. Milton observed a “mess” and what “smelled like dank swamp water.” *Id.* at A589. Following Harvey, Mr. Milton returned to his property by boat to standing water that reached his chest. *Id.* at A730–32. He testified that such inundation reached “4 foot 3 and 3 quarters [inches].” *Id.* at A681. In addition to appliances being submerged, the Milton’s walls lost their brightness, carpets looked “grungy,” and a putrid smell lingered

⁴ The Harris County Flood District “is a special purpose district created by the Texas Legislature in 1937” that “implement[s] flood damage reduction projects across Harris County.” ECF No. 548, at ¶ 47. Its jurisdictional boundaries include Houston as well. *Id.*

throughout their home. *See id.* According to Mr. Milton, “you couldn’t even open the drawers,” because “everything was swollen.” *Id.* at A810.

931 Bayou Parkway, Houston, TX, 77077 (“Shipos Property”). Jennifer Shipos purchased her property in 1996. ECF No. 548, at ¶ 33. Ms. Shipos alleged that flooding began at her house on August 29, 2017, and remained until September 4, 2017. Pls.’ 266-2, at A1126. Ms. Shipos believed her home experienced “12 to 15 inches” of first floor flooding. *Id.* at A683. She also noted that her backyard sustained approximately 18 inches of flooding as well. *Id.* at A686. In Harvey’s wake, floodwaters totaled her car, and Ms. Shipos purchased an entire new set of furniture as well. *Id.* at A837, A840–41. In her opinion, Addicks and Barker operated to “control the flow of water all the way downtown . . . not flooding” downstream areas. *Id.* at A582. While stormwater from a 2016 storm reached her yard, Shipos noted that she had never experienced flooding inside her residence. *Id.* at A485.

3 Magnolia Bend Drive, Houston, Texas 77024 (“Azar property”). Phillip Azar purchased his property in 1990. ECF No. 548, at ¶ 25. Mr. Azar estimated that flooding began on August 25, 2017, and persisted for “ten to fourteen days” until around September 8, 2017. Pls.’ 266-2, at A1039. He further noted that flooding worsened on August 28, 2017, and reached “117 inches” at his house. *Id.* at A664–65; PX14, at 1A788. Following Harvey, Mr. Azar testified that his house was uninhabitable and that the storm displaced his family. Pls.’ 266-2, at A750–51, A891. As of July 2018, his family was “policing” cleanup of his property as Mr. Azar looked to purchase a new residence. *Id.* at A751–52. Before Harvey, Mr. Azar estimated that his home had experienced “[o]nly a couple of inches to maybe 1 foot of water” of flooding. *Id.* at A1040. But he also noted that his property had sustained consistent indoor flooding during major precipitation events, none of which compared to Harvey. *Id.* at A632–44. According to Mr. Azar, he “would never [have] move[d]” to Houston had he known flooding from Induced Surcharges would happen. *Id.* at A497.

835 Thornvine Lane, Houston, Texas 77079 (“Aldred property”). Val Aldred purchased his property in 1997. ECF No. 548, at ¶ 24. While he admitted that it “rains a lot” in Houston, Mr. Aldred did not consider the risk of flooding when he acquired his residence. Pls.’ 266-2, at A494. Prior to the storm, Aldred’s property experienced slight flooding “that just barely crept in from [] the driveway” but “[n]ot like Harvey.” *Id.* at A627. Mr. Aldred alleged that flooding began on August 29, 2017, and remained until approximately September 2, 2017. *Id.* at A718, A1037. He testified that his property received “[a]bout a foot and a half” of flooding from Harvey. *Id.* at A662, A968. During Harvey, Aldred evacuated on August 29 because “the water was getting higher to the point” that the entryway to his neighborhood became submerged. *Id.* at A697. Mr. Aldred lost personal effects and removed walls, insulation, and sheetrock from his property after Harvey passed. *Id.* at A718, A744.

107 Warrenton Drive, Houston, Texas 77024 (“Beyoglu property”). Gokhan and Jana Beyoglu purchased their home in 2005. *Id.* at A601.⁵ The Beyoglu’s alleged that flooding began around August 27, 2017, and ended on September 5, 2017, or 10 days. *Id.* at A898, A1042. When they purchased their house, the Beyoglu’s did not receive any information about prior flooding at

⁵ The parties’ stipulated that the Beyoglu’s purchased their property in 2009. *See* ECF No. 548, at ¶ 26.

their residence. *Id.* at A500. In fact, Mrs. Beyoglu thought Addicks and Barker served Houston by providing residents with clean water. *Id.* at A539. During Harvey, the Beyoglu's claimed that peak inundation reached four feet. *Id.* at A669. She further testified that they "lost almost everything" on the first floor. *Id.* at A756. After Harvey, the Beyoglus temporarily lived in an apartment while they repaired their house. *Id.* at A903. The family attempted to move back into the second floor of their property but ended up purchasing a new home in February 2018. *Id.*

311 Blue Willow Drive, Houston, Texas 77042 ("Cutts property"). Paul and Dana Cutts purchased their property in 1976. ECF No. 548, at ¶ 27. They alleged that flooding in their home began on August 30, 2017, and ended on September 7, 2017. Pls.' 266-2, at A671, A723, A1046. Until Harvey, the Cutts property "has never once flooded in the past 41 years [they] have lived there." *Id.* at A1047. According to the Cutts', impounded waters from Addicks "began to quickly flood back into our subdivision" when defendant invoked Section 7-05(b). *Id.* at A1046. On August 30, 2017, a "thin layer of water covered [their] interior floors" at 3:00 a.m. *Id.* By 6:00 a.m., floodwaters "had flowed into and impacted all parts of" their house. *Id.* An hour later, they evacuated by kayak. *Id.* When the Cutts' returned on September 7, they had to wade on foot from several blocks away to reach their house. *Id.* They alleged that watermarks reached eight inches throughout their house, 10 inches in their garage, and 12 inches on their front lawn. *Id.* Outside, their foliage and "significant plants and trees" sustained damages or were killed by exposure to standing water. *Id.*

14334 Heatherfield Drive, Houston, Texas 77079 ("Godejord property"). Arnstein and Inga Godejord purchased their property in 2008. ECF No. 548, at ¶ 28. The Godejord's alleged flooding at their home began on August 29, 2017 and that flooding ended on September 8, 2017. Pls.' 266-2, A1050. While in Canada, their son warned them that their house could flood from Induced Surcharges. *Id.* at A553. Godejord's son "felt that he had to run," due to risks associated with the flooding. *Id.* at A705–06. In total, flooding at the Godejord property reached approximately two feet. *Id.* at A673. When they returned, the Godejord's attempted to salvage effects inside their house. *Id.* at A911. They used dehumidifiers and fans to dry their house which took a couple of months to complete. *Id.* at A912–13. The sewage line also retained floodwaters which necessitated repairs. *Id.* at A770. Since Harvey, the Godejord's lived in a few hotels, rented an apartment, and as of September 2018 resided in a rental house. *Id.*

760 Memorial Mews Street #4, Houston Texas 77079 ("Good Resources" property). Good Resources LLC purchased its property in 2015. ECF No. 548, at ¶ 29. This property consisted of four rental units. Pls.' 266-2, at A1053. Mr. Jeremy Good, the owner, testified that flooding began on August 28, 2017, and was otherwise inaccessible until September 10, 2017. *Id.* at A1053. Prior to Harvey, he was unaware of flooding at or near his property. *Id.* at A507. During Harvey, all tenants evacuated the premises. *Id.* at A708–09. Mr. Good estimated that his complex experienced around 38-40 inches of flooding. *Id.* at A675. According to Mr. Good, floodwaters damaged all four air conditioning compressors and the shared water heater. *Id.* When he returned to his property, Mr. Good described the bottom units as "complete devastation." *Id.* at A776. Mr. Good thought Addicks and Barker provided an "overflow area if the storms ever got very, very bad." *Id.* at A550.

14914 River Forest Drive, Houston, Texas 77079 (“Hollis property”). Wayne Hollis Jr. and Peggy Hollis purchased their property in 1983. ECF No. 548, at ¶ 30. The Hollis’ alleged that flooding began on August 28, 2017, and ended approximately two weeks after the flooding began. Pls.’ 266-2, at A1056. They further alleged their residence reached peak inundation of 43-45 inches. *Id.* at A678. As the Hollis’ sought to evacuate their house on August 28, two men in a “catamaran that had a pontoon on each” side was able to move Mrs. Hollis and her 93-year-old mom to safety. *Id.* at A711. Mr. Hollis returned around September 9, 2017, to sludge and water in his home. *Id.* at A728. He further testified that their furniture and downstairs area “was ruined” and that their personal property “was discarded and moved curbside where the City of Houston hauled the damaged items to an unknown landfill.” *Id.* at A728, A1056. According to Mr. Hollis, there had been no flooding at their home prior to their purchase. *Id.* at A509.

777 S. Mayde Creek Drive, Houston, Texas 77079 (“Memorial SMC 2013, LP property”). In connection with a third party, John Britton acquired an old office building in 2013. Pls.’ 266-2, at A479; ECF No. 548, at ¶ 31. Mr. Britton then constructed an apartment complex on that nine-acre parcel of land. Pls.’ 266-2, at A479–80. He alleged that flooding began on August 27, 2017, reached peak inundation of six feet, and ended on September 11, 2017. *Id.* at A1059. During Harvey, all tenants evacuated the premises and no one could return until December 20, 2017. *Id.* at A806. Mr. Britton testified that upon re-entry, tenants could not access common area amenities, the pools, fitness center, and resident rooms. *Id.* at A928. While some residents returned to their apartments, Mr. Britton admitted that it was difficult to achieve occupancy “even by offering additional incentives, [and] rent concessions . . . in exchange for not having amenities and common areas.” *Id.* As the Memorial SMC property became rebuilt, Houston required Mr. Britton to adhere to stricter codes than when he originally constructed his apartment complex. *Id.*

12515 Westerley Lane, Houston, Texas 77077 (“Silverman property”). Peter and Zhennia Silverman purchased their property in 1990. ECF No. 548, at ¶ 34. The Silverman’s alleged that flooding began around August 29, 2017, reached peak inundation of 1.5 feet, and ended around September 8, 2017. Pls.’ 266-2, at A1133; PX 14, at A1788. Mrs. Silverman testified that their home had flooded in the 1990s and before Harvey, but “just enough to [] wet the carpet,” or “make the tile floors a little damp,” not inches of water. Pls.’ 266-2, at A647–58. The Silverman property sustained damage to their foundation and to their personal effects. *Id.* at A850–55. Mr. Silverman described the scene as “surreal because things had moved to places where they normally wouldn’t be because they . . . floated away.” *Id.* at A850. In addition to a stench that smelled like “dead animals,” Mr. Silverman found mold covering the walls. *Id.* at A851. The Silverman’s hired a contractor to perform “demo remediation,” which included removing entire rooms and built-in features of their house. *Id.* at 856. The family moved into an apartment following Harvey. *Id.* at A943–44.

5731 Logan Lane, Houston, Texas 77007 (“Welling property”). Shawn Welling purchased his property in 2000. ECF No. 548, at ¶ 35. Mr. Welling alleged that flooding began on or before August 28, 2017 and reached peak inundation of 10 feet. Pls.’ 266-2, at A1146. Mr. Welling represented that he previously pumped 2-3 feet of water from his property. *Id.* According to Mr. Welling, his property experienced around a quarter inch of prior flooding to an addition to his property, not the original structure. *Id.* at A525. Dutch Lindeburg visited the property daily and observed a noticeable increase in flooding from August 28 to August 29. *Id.* at A876, A1032.

Mr. Lindeburg testified that peak flooding occurred on August 29, when standing water reached “over the doorjamb.” *Id.* at A695.

II. PROCEDURAL HISTORY

In September 2017, Houston-area property owners began filing complaints alleging that defendant’s actions constituted a compensable taking under the Fifth Amendment. Soon after, this Court consolidated all related cases into a Master Docket. *See In re Addicks And Barker (Texas) Flood Control Reservoirs*, No. 1:17-03000-MMS (2017). That December, the Master Docket was bifurcated into an Upstream Sub-Docket (No. 17-9001) and a Downstream Sub-Docket (No. 17-9002). *See* Order Requiring Case Identification, ECF No. 10; Order Severing Claims into Two Separate Dockets, No. 17-3000, ECF No. 102.

A. The Downstream Sub-Docket.

To promote judicial efficiency, the parties selected a group of 14 test properties to represent all downstream plaintiffs in March 2018. *See* No. 17-9002, ECF No. 61; ECF No. 63; ECF No. 81.⁶ Some test properties sued individually, but many stood as plaintiffs for a proposed class. *See* ECF No. 81, at 1–2. During litigation, plaintiffs Becky Ho and Timothy Stahl voluntarily moved to dismiss their cases, leaving 12 test properties. *See* ECF No. 96; ECF No. 188.

On February 20, 2018, defendant moved to dismiss this case for lack of subject-matter jurisdiction and for failure to state a claim under RCFC 12(b)(1) and 12(b)(6). Def.’s Mot. to Dismiss, ECF No. 48. In its motion, defendant alleged that no taking occurred because state and federal law did not provide plaintiffs with a compensable property interest and plaintiffs’ claims sounded in tort. *See generally id.* Plaintiffs responded a month later and asserted that Texas law granted them a cognizable property interest and that defendant could not assert necessity or the relative benefits doctrine as affirmative defenses at the motion to dismiss stage. *See generally* Pls.’ Resp. Br., ECF No. 72. In April 2018, Judge Susan G. Braden deferred ruling on defendant’s motion to dismiss and set a pre-trial and discovery schedule. ECF No. 92. Later in January 2019, the Court reassigned the Downstream Sub-Docket to Senior Judge Loren A. Smith. ECF No. 152.

At a March 2019 oral argument in Houston, Texas, this Court concluded that jurisdictional issues prevented the case from proceeding to a liability trial. ECF No. 162. The Court then ordered cross-motions for summary judgment and instructed the parties to address: (1) whether a protected property interest existed under Texas law when the flooding occurred due to “an Act of God;” and (2) the applicability of the FCA of 1928 and defining “floods or floodwaters.” *Id.* From June 2019 to mid-September 2019, the parties engaged in a full briefing schedule. *See* ECF No. 175; ECF No. 183; ECF No. 184; ECF No. 190. On December 11, 2019, the Court heard oral argument. It encouraged the parties to settle, but no agreement resulted.

Following oral argument, the Court issued its initial opinion on February 18, 2020. *See In re Downstream Addicks and Barker (Texas) Flood-Control Reservoirs*, 147 Fed. Cl. 566 (2020). In its decision, the Court granted defendant’s motion to dismiss. *Id.* at 584. The Court also granted

⁶ Unless otherwise specified, all subsequent docket references refer to the Downstream Sub-Docket, No. 17-9002.

defendant's cross-motion for summary judgment and denied plaintiffs' cross-motion for summary judgment. *Id.* Specifically, the Court held: (1) that Texas state law did not recognize "perfect flood control in the wake of an Act of God" as a protected property interest; and (2) that federal law did not grant plaintiffs a protected property interest either. *Id.* at 577–84. On November 3, 2020, plaintiffs appealed this Court's decision to the Federal Circuit. *See Milton v. United States*, No. 21-1131 (2020).

On June 2, 2022, the Federal Circuit reversed the Court's dismissal of plaintiffs' case. *See Milton v. United States*, 36 F.4th 1154 (Fed. Cir. 2022). There, the Federal Circuit concluded that plaintiffs identified flowage easements in their properties, which was a cognizable property interest under Texas law. *Id.* at 1161–62. At the same time, it refrained from answering whether an actual taking occurred. *See id.* at 1163. Instead, the Federal Circuit remanded this case for the Court to answer four questions. *Id.* Those questions, which form the basis of this opinion, are:

1. Whether plaintiffs have shown that a temporary taking occurred under the test enunciated in *Arkansas Game & Fish v. United States*, 568 U.S. 23, 39 (2012);
2. Whether plaintiffs have shown that a permanent taking occurred;
3. Whether plaintiffs have established causation when considering "the impact of the entirety of the government actions that address the relevant risk;" and
4. Whether defendant can invoke the necessity doctrine as a defense.

Id. After reopening the Downstream Sub-Docket, ECF No. 253, the Court ordered a new round of cross-motions for summary judgment. *See* ECF No. 255. Defendant filed its cross-motion for summary judgment on November 21, 2022. ECF No. 262. Plaintiffs filed their response and their cross-motion for summary judgment on January 10, 2023. ECF No. 266. The parties further exchanged reply briefs and briefing concluded in May 2023. ECF No. 277; ECF No. 281.

After another oral argument held on February 21, 2024, the parties agreed that certain factual disputes existed that necessitated a limited trial. ECF No. 469; ECF No. 513. In response, the Court asked the parties to answer two questions at trial:

1. Was there an emergency that necessitated the United States Army Corps of Engineers (the "Corps") opening the Addicks and Barker reservoir gates, or were the gates opened as a matter of ordinary operating procedure; and
2. What would have happened if the gates had remained closed?

See ECF No. 514. Trial began on October 25, 2024, in Houston, Texas, and lasted four days. ECF No. 565; ECF No. 566; ECF No. 568; ECF No. 569. Proceedings continued in Washington, D.C., on December 4, 2024, and the Court held closing arguments on April 8, 2025. ECF No. 573; ECF No. 591.

During trial, both parties examined several witnesses. This included the following Corps officials: (1) Natural Resource Management Specialist Richard Long who handled communications during Harvey; (2) Galveston District's Dam Safety Officer Robert Thomas; (3) Colonel Zetterstrom; and (4) Branch Chief of Hydraulics and Hydrology Engineering Coraggio Maglio. ECF No. 542, 545. The parties also called their experts Matthew Bardol and Dr. Robert Nairn. *Id.* Plaintiffs and defendant then submitted post-trial briefing. ECF No. 576; ECF No. 577; ECF No. 580; ECF No. 581. In sum, plaintiffs argued that no actual emergency occurred at the Dams during Hurricane Harvey to satisfy the necessity doctrine. *See generally* ECF No. 576. According to plaintiffs, Section 7-05(b) was a non-emergency regulation. *Id.* Furthermore, their properties would have experienced little to no flooding if defendant had kept the gates closed. *Id.* In opposition, defendant argued that Harvey's unprecedented rainfall endangered life and property around the Reservoirs and that emergency conditions existed under defendant's EAP and Water Manual. *See generally* ECF No. 577. Defendant also contended that flooding downstream properties was necessary to prevent potential dam failure and it acted reasonably under the circumstances. *Id.*

B. The *Upstream Docket And Ablan*.

During the pendency of the Downstream Sub-Docket, the Upstream Sub-Docket moved forward. In 2019, Senior Judge Charles F. Lettow issued his liability trial opinion. *See In re Upstream Addicks & Barker (Texas) Flood-Control Reservoirs*, 146 Fed. Cl. 219 (2019). There, the plaintiffs asserted that defendant's "construction, modification, maintenance, and operation" of the Dams led to flooding on their properties during Harvey. *Id.* at 255. Judge Lettow held that defendant took a permanent flowage easement toward upstream properties under the test announced in *Arkansas Game & Fish*. *Id.* at 249–250. The Court also held that defendant could not use the necessity doctrine to escape liability or that its actions qualified as a valid exercise of its police powers. *Id.* at 263–64.

On December 23, 2025, the Federal Circuit affirmed Judge Lettow's 2019 opinion in *Ablan v. United States*, 162 F.4th 1364 (Fed. Cir. 2025). The court concluded that a permanent taking occurred because the intermittent, yet recurring flooding of upstream properties was foreseeable. *Id.* at 1375–76. Alternatively, the Federal Circuit determined that it would hold defendant liable under a temporary takings theory. *Id.* at 1376. It agreed with and incorporated Judge Lettow's findings under the *Arkansas Game & Fish* test to support its conclusion. *Id.* at 1377–78. Finally, the court determined that defendant could not establish necessity as a defense. *Id.* at 1378. According to the Federal Circuit, defendant's choice to allocate floodwater between upstream and downstream residents was not contemplated by the doctrine. *Id.*

In January 2026, this Court called a status conference to discuss the implications of *Ablan* and whether the parties would be amenable to settlement negotiations. ECF No. 593. At the status conference, defendant objected to engaging in such discussions. Defendant opined that this case is factually distinguishable from *Upstream* and that it raises different legal arguments. ECF No. 596. The Court noted defendant's opposition toward settlement and ordered supplemental briefing for each party to elaborate how *Ablan* may or may not affect the disposition of this case. ECF No. 594. Instead of addressing "what the necessity defense *is*," defendant took issue with the Federal Circuit's decision to provide three examples of what "the upstream case was not." *See* ECF No.

598 at 5–6 (emphasis in original). With respect to necessity, defendant posited that the Court could not resolve issues based on *Ablan* because of its obligation under RCFC 52(a) “where the [C]ourt was presented with different evidence about differently situated upstream plaintiffs.” *Id.* at 8. Next, defendant noted that *Ablan* failed to discuss questions related to causation. *Id.* at 9. And finally, defendant averred that it could prevail under its relative benefits defense because the Dams have provided “more than seventy years” of protection to downstream residents. *Id.* at 10. Plaintiffs relied on *Ablan*’s holdings and its prior briefing. *See generally* ECF No. 599. They believed that “*Ablan* is squarely on-point,” and while defendant did construct Addicks and Barker “for the benefit of downtown Houston, it did not operate the dams in a manner to benefit the Plaintiffs’ properties.” *Id.* at 11–12.

III. LEGAL STANDARDS

A. Summary Judgment Standard.

Summary judgment is “*mandate[d]* . . . after adequate time for discovery and upon motion, against a party who fails to make a showing sufficient to establish the existence of an element essential to that party’s case, and on which that party will bear the burden of proof at trial.” *Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986) (emphasis added). There is no genuine factual dispute in that situation “since a complete failure of proof concerning an essential element of the nonmoving party’s case necessarily renders all other facts immaterial.” *Id.* at 322–23. Put differently, a court may grant summary judgment when the materials in the record show that “there is no genuine issue as to any material fact and the movant is entitled to judgment as a matter of law.” RCFC 56(a), (c). The nonmovant bears the burden of providing sufficient evidence to establish a genuine issue of a material fact. *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986). A scintilla of evidence, conclusory allegations, speculation, and unsubstantiated assertions will not carry this burden. *Anderson v. Liberty Lobby Inc.*, 477 U.S. 242, 248, 250 (1986). A “genuine” dispute arises if the factfinder may reasonably resolve such issue “in favor of either party,” and a fact is “material” if it might “affect the outcome of the case under the governing law.” *Id.*

“[D]ue to the fact-intensive nature of takings cases, summary judgment should not be granted precipitously.” *Moden v. United States*, 404 F.3d 1335, 1342 (Fed. Cir. 2005) (citing *Yuba Goldfields, Inc. v. United States*, 723 F.2d 884, 887 (Fed. Cir. 1983)).

B. Takings Framework.

The Takings Clause of the Fifth Amendment provides that private property shall not “be taken for public use, without just compensation.” U.S. Const. amend. V, cl. 4. This protection is “designed to bar [the] Government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole.” *Armstrong v. United States*, 364 U.S. 40, 49 (1960); *see also Penn Cent. Transp. Co. v. City of New York*, 438 U.S. 104, 123–25 (1978). When the government physically appropriates private property for public use, the Takings Clause imposes “a clear and categorical obligation to provide the owner with just compensation.” *Tahoe-Sierra Pres. Council, Inc. v. Tahoe Reg’l Plan. Agency*, 535 U.S. 302, 322

(2002) (citation omitted); *see id.* at 322 (assessing *per se* takings according to a straightforward rule: “[t]he government must pay for what it takes.”).

To determine whether a taking occurred, the Federal Circuit considers: (1) whether “the claimant has identified a cognizable Fifth Amendment property interest that is asserted to be the subject of the taking;” and (2) whether “the governmental action at issue amounted to a compensable taking of that property interest.” *Acceptance Ins. Cos., Inc. v. United States*, 583 F.3d 849, 854 (Fed. Cir. 2009); *Am. Pelagic Fishing Co., L.P. v. United States*, 379 F.3d 1363, 1372 (Fed. Cir. 2004).

The Supreme Court, “quite simply, has been unable to develop any ‘set formula’ for determining when ‘justice and fairness’ require” compensation under the Takings Clause.” *Penn Cent.*, 438 U.S. at 124; *see Arkansas Game & Fish Comm’n v. United States*, 568 U.S. 23, 31 (2012) [hereinafter *Arkansas Game I*] (“[N]o magic formula enables a court to judge, in every case, whether a given government interference with property is a taking.”). Some bright-line rules exist. For instance, a taking occurs following a permanent physical occupation of property by authorized government action. *See Loretto v. Teleprompter Manhattan CATV Corp.*, 458 U.S. 419, 426 (1982). Regulations that permanently deprive a landowner of all economically beneficial use of their land also constitute a taking. *Lucas v. S.C. Coastal Council*, 505 U.S. 1003, 1019 (1992). Nonetheless, most cases draw on “situation-specific factual inquiries.” *Arkansas Game I*, 568 U.S. at 32; *Huntleigh USA Corp. v. United States*, 525 F.3d 1370, 1377–78 (Fed. Cir. 2008) (“The issue of whether a taking has occurred is a question of law based on factual underpinnings.”).

In defining a constitutional taking, the government takes property physically or by regulation. *Caquelin v. United States*, 140 Fed. Cl. 564, 573 (2018), *aff’d*, 959 F.3d 1360 (Fed. Cir. 2020). Takings can be further divided into two sub-categories: categorical and non-categorical. *Id.* The “classic taking” occurs when “the government directly appropriates private property for its own use.” *Horne v. Dep’t of Agric.*, 576 U.S. 350, 357 (2015). A regulatory taking exists “when a regulatory or administrative action places burdens on the ownership of private property that essential elements of such ownership must be viewed as having been taken.” *Hendler v. United States*, 36 Fed. Cl. 574, 585, *aff’d*, 175 F.3d 1374 (Fed. Cir. 1999). “Categorical takings deprive the owners of all economically viable use of their property. Non-categorical takings, on the other hand, deprive the owner of some amount of the economic use of their land.” *Caquelin*, 140 Fed. Cl. at 573. Takings can be further divided into permanent and temporary takings. Permanent takings refer to governmental activities substantial in nature but they need not be “exclusive, or continuous and uninterrupted.” *Hendler v. United States*, 952 F.2d 1364, 1377 (Fed. Cir. 1991). Temporary takings include activities “when what would otherwise be a permanent taking is temporally cut short.” *Wyatt v. United States*, 271 F.3d 1090, 1097 (Fed. Cir. 2001).

Typically, the government initiates formal condemnation proceedings to effect a taking. *See First Eng. Evangelical Lutheran Church of Glendale v. Los Angeles Cnty., Cal.*, 482 U.S. 304, 316 (1987). But takings also occur under inverse condemnation when a landowner seeks to “recover[] just compensation for a taking of his property when condemnation proceedings have not been instituted.” *United States v. Clarke*, 445 U.S. 253, 257 (1980). Beginning in the late 19th century, the Supreme Court held that government-induced flooding qualified as a taking. *See Pumpelly v. Green Bay Co.*, 80 U.S. (13 Wall.) 166 (1872) (imposing liability when the Wisconsin

state government authorized actions that permanently submerged private property). Over time, the Court's case law grew to recognize intermittent, yet recurring flooding induced by the government as a permanent taking. *see generally United States v. Dickinson*, 331 U.S. 745 (1947); *United States v. Cress*, 243 U.S. 316 (1917). And in 2012, the Supreme Court formally held that such flooding could qualify as a temporary taking. *Arkansas Game I*, 568 U.S. at 28–29.

IV. DISCUSSION

A. Question 1: Whether A Temporary Taking Occurred Under The *Arkansas Game & Fish* Multi-Factor Test.

First, the Federal Circuit asked the Court to address whether the Induced Surcharges qualify as a temporary taking. *Id.* Temporary takings “should be analyzed in the same constitutional framework applied to permanent [] takings.” *Yuba*, 821 F.2d at 641–42. These types of takings grew in recognition during World War II “when the Government took temporary possession of many properties.” *Arkansas Game I*, 568 U.S. at 33 (citing *Kimball Laundry Co. v. United States*, 338 U.S. 1 (1949); *United States v. Gen. Motors Corp.*, 323 U.S. 373 (1945)). Temporary takings also include government actions that create “a direct and immediate interference with the enjoyment and use of the land.” *Id.* (quoting *Causby*, 328 U.S. at 266).

In *Arkansas Game I*, defendant developed a Water Control Manual “to determine the rates at which water would be released from [a dam].” *Id.* at 27. The “Manual set[] seasonally varying release rates, but permit[ted] planned deviations from the prescribed rates for agricultural, recreational and other purposes.” *Id.* From 1993 through 2000, defendant implemented deviations by extending the period in which high amounts of water would be released. *Id.* As a result, defendant's actions destroyed 18 million feet of board timber and disturbed wildlife preservation efforts on the plaintiff's property. *Id.* at 27–28. The Supreme Court held, “*simply and only*, that government induced flooding temporary in duration gains no automatic exemption from Takings Clause inspection.” *Id.* at 38 (emphasis added).

When making similar inquiries, the Court instructed lower courts to consider the following: (1) the time and duration of the alleged invasion; (2) “the degree to which the invasion is intended or is the foreseeable result of authorized government action;” (3) the character of the land at issue and the “owner's reasonable investment-backed expectations regarding the land's use;” and (4) the severity of the interference. *Id.* at 38–39 (citations and quotations omitted). Furthermore, the Supreme Court cautioned that lower courts should use its test “with reference to the particular circumstances of each case, and not by resorting to blanket exclusionary rules.” *Id.* at 37.

In *Upstream*, the Court applied *Arkansas Game I*'s test and concluded that a *permanent* taking occurred. *See In re Upstream*, 146 Fed. Cl. at 249–50. The Federal Circuit in *Ablan* affirmed Judge Lettow's opinion but then incorporated his findings to conclude that defendant's actions constituted a temporary taking. *Ablan*, 162 F.4th at 1375–78.

Defendant never addressed *Arkansas Game I*'s applicability in its opening brief. *See generally* ECF No. 262. Instead, it posited that factual disputes prevent the Court from granting summary judgment in favor of plaintiffs. ECF. No. 277, at 39–40. For support, defendant cited a

reply brief it filed almost six years ago. *See* ECF No. 194, at 17–19. There, defendant asserted that plaintiffs disputed the accuracy of Dr. Nairn’s expert report and whether certain properties experienced flooding of substantial duration. *Id.* at 17–18 (citing ECF No. 175, at 17 n. 9; ECF No. 190, at 6 n. 5). Upon review, defendant misrepresented plaintiffs’ so-called concessions.

Indeed, plaintiffs did challenge the validity of Dr. Nairn’s report. ECF No. 190, at 6 n. 5. But plaintiffs expressly stated that “for the purposes of this Motion, the Government’s expert model shows that there is no dispute that, had the Government kept the gates closed, Plaintiffs would have remained dry or suffered substantially less severe flooding.” *Id.* Also, whether plaintiffs experienced more flooding from Induced Surcharges seems to address causation, not whether a taking occurred under *Arkansas Game I*. Thus, no factual dispute exists. Next, plaintiffs conceded in 2019 that “there is a dispute of fact as to *whether the flooding prior to the Government’s induced surcharge release* was substantial” at Azar and Welling’s properties. ECF No. 175, at 17 n. 9 (emphasis added). According to defendant, this admission implicated the severity element in *Arkansas Game I*’s test. ECF No. 194, at 18. Not so. Unlike defendant’s representations, plaintiffs’ footnote questioned the extent of *prior* flooding at *two* test properties, not flooding that *actually occurred* during Harvey for *all* test properties. *Compare* ECF No. 175, at 17 n. 9; *with* ECF No. 277, at 39–40.

The Court also concludes that plaintiffs’ second concession does not qualify as a judicial admission. *Alli v. United States*, 86 Fed. Cl. 33, 35 (2009) (defining such admissions as “formal act[s], done in the course of judicial proceedings, which . . . conced[es] for purposes of litigation that the proposition of fact alleged . . . is true.”) (quotations omitted). Some circuits bind parties to statements made in their briefs. *See Berckely Inv. Grp., Ltd. V. Colkitt*, 455 F.3d 195, 211 n. 20 (3d Cir. 2006) (collecting cases). At least one court in this circuit rejected statements found in a brief as a judicial admission. *See Prickett v. Mansfield*, 257 F. App’x 288, 292 (Fed. Cir. 2007). Regardless, plaintiffs’ statement acts as a legal conclusion, not a factual assertion. Additionally, plaintiffs are not judicially estopped from asserting their claim because this Court never adopted their position. *See Data Gen. Corp. v. Johnson*, 78 F.3d 1556, 1565 (Fed. Cir. 1996). In its current brief, defendant also cited plaintiffs’ contention that whether a temporary taking occurred “[a]t the very least . . . warrants full factual development at trial.” ECF No. 262, at 13. When read in context, the Court agrees that plaintiffs’ statement serves as a “fallback position.” *See* ECF No. 281, at 4. Therefore, the Court finds that plaintiffs’ prior statements do not preclude it from answering Question 1.

Aside from its attempt to manufacture factual disputes, defendant failed to offer a substantive rebuttal to plaintiffs’ temporary takings theory. Thus, plaintiffs’ assertions proceed largely unopposed. After careful consideration, the Court holds that a temporary taking occurred.

1. The Time And Duration Of The Flooding Rises To The Level Of A Taking.

Starting from the top, the Court looks at the time and duration of defendant’s alleged invasion. *Arkansas Game I*, 568 U.S. at 38.

On remand, the “temporary and ad hoc” nature of the flooding in *Arkansas Game* did not preclude liability. *Arkansas Game & Fish Comm’n v. United States*, 736 F.3d 1364, 1369 (Fed.

Cir. 2013) [hereinafter *Arkansas Game II*]. Since the Supreme Court held that temporary flooding could result in a compensable taking, the Federal Circuit believed that defendant's argument limited itself to the duration of its deviations. *Id.* at 1369–70. The court ignored defendant's contention that each deviation failed to effect a taking since defendant's actions "had a consistent overall impact on the Management area" that imposed a severe burden on the plaintiff's land. *Id.* at 1370. Thus, defendant could not prevail "on the ground that the series of interim deviations were adopted on a year-by-year basis, rather than as part of a single multi-year plan, when the deviations were designed to serve a single purpose and collectively caused repeated flooding." *Id.*

In *Ablan*, the Federal Circuit held that defendant "reserves the right to repeat the impoundment" of floodwaters and "the likelihood of recurrent flooding is high." *See Ablan*, 162 F.4th at 1377 (quoting *In re Upstream*, 146 Fed. Cl. at 250). By subjecting upstream properties to probable future flooding, defendant's "actions at issue here is not measured by the length of time the water inundates the properties . . . rather it is measured by a permanent right to inundate the property with impounded flood waters." *Id.* (quoting *In re Upstream*, 146 Fed. Cl. at 250). Flooding experienced by upstream properties, then, did not amount to an "isolated trespass" that would be used "during only the most extreme natural disasters." *Id.*

Here, *Upstream* and *Ablan* focused on defendant's right to flood private property, whereas *Arkansas Game II* addressed actual flooding. Both analyses weigh in favor of plaintiffs. Under *Arkansas Game II*'s approach, the Induced Surcharges caused weeks of flooding that devastated plaintiffs' properties. As plaintiffs noted, "this was not some fleeting episode." *See* ECF No. 266, at 21. Defendant began releasing floodwater under Section 7-05(b) on August 28, 2017, and concluded such releases on September 16, 2017. Pls.' Ex. 266-8, at A3628–29; Def. Ex. 58, at 3876. Some properties reported receiving flooding well into September 2017. Pls.' Ex. 266-2, at A721, A725, A728, A732–33, A735, A737.⁷ Each plaintiff experienced varying duration of flooding at their property. For instance, Ms. Shipos testified that floodwaters took six days to recede from the interior of her house. *Id.* at A737. Mr. Hollis did not return to his home until around September 9, 2017, after water cleared from his residence. *Id.* at A728. Mr. Milton reported that standing water stayed inside his house for "at least two weeks." *Id.* at A735. Thus, the "day-by-day" basis in which surcharges flooded and persisted on plaintiffs' properties "collectively caused repeated flooding." *Arkansas Game II*, 736 F.3d at 1370.

On the ground level, plaintiffs were forced to evacuate their properties. Pls.' Ex. 266-2, at A696–716. Invoking Section 7-05(b) "deprived [plaintiffs] of the use and enjoyment of their properties for months," with many unable to inhabit their properties up to a year. ECF No. 266, at 21; Pls.' 266-2, at A884–966. Some plaintiffs were forced to rent apartments or stay at hotels following Harvey. *Id.* at A903, A913, A956–58. Mr. Britton could not reopen his apartment complex until December 2017 and struggled to attract business thereafter. *Id.* at A928–29. Indeed, defendant in *Arkansas Game* began its deviations from September 1993 to December 1993 and adopted deviations of similar lengths in subsequent years. *Arkansas Game I*, 568 U.S. at 27–28. But when undergoing its inquiry, the Federal Circuit viewed defendant's deviations "as having lasted for seven years," and concluded that any taking "must be assessed in light of an invasion of

⁷ The property descriptions found in the factual background section provide more information regarding each plaintiffs' experience during and following Harvey. *Supra* Section I.D.

that duration.” *Arkansas Game II*, 736 F.3d at 1370 (citations omitted). Thus, the ensuing interference with plaintiffs’ properties appears to factor into duration.

Defendant’s only cognizable rebuttal arises from its belief that Harvey’s singular occurrence turns plaintiffs’ claims into a tort. ECF No. 266, at 51–55. But the alleged taking arose from defendant’s decision to flood plaintiffs’ properties through induced surcharges, not the storm itself. Additionally, courts must reconcile duration with the rest of *Arkansas Game I*’s test. *See Arkansas Game II*, 736 F.3d at 1370 (finding temporary nature of deviations did not stand as a valid ground to deny takings liability).⁸ And for further support, courts have already concluded that a singular flood may constitute a temporary taking. *See Ablan*, 162 F.4th at 1376–78; *see also Quebedeaux v. United States*, 112 Fed. Cl. 317, 324 (2013) (collecting cases).

Temporary flooding case law does not impose a temporal threshold. *See Arkansas Game I*, 568 U.S. at 37. The Court holds that the time and duration of flooding in this case weighs in favor of a temporary taking.

2. Flooding From The Induced Surcharge Was Both Intentional And Foreseeable.

i. Defendant’s Own Data And Testimony Reveals Flooding The Downstream Properties Was Entirely Foreseeable.

Next, the Court analyzes “the degree to which the invasion is intended *or* is the foreseeable result of authorized government action.” *Id.* at 39 (emphasis added); *see also Moden*, 404 F.3d at 1343; *Ridge Line*, 346 F.3d at 1357. If government actions merely contributed toward flooding, then such actions most likely lie in tort as opposed to a taking. *See Columbia Basin Orchard v. United States*, 132 F. Supp. 701, 709 (Ct. Cl. 1973). Courts review “whether the results of the government actions could have been objectively foreseen.” *See John Horstmann Co.*, 257 U.S. at 146; *Sanguinetti v. United States*, 264 U.S. 146, 147–48 (1924).

In *Arkansas Game II*, the Federal Circuit found that “a reasonable investigation by the Corps of Engineers prior to implementing the deviations . . . would have revealed that the deviations would result in a significant increase” in flooding.” *Arkansas Game II*, 736 F.3d at 1373.

⁸ Plaintiffs also satisfied the time and duration element in contemplation of *Upstream* and *Ablan*’s holding. But the Court intends to distinguish its reasoning. There, *Upstream* held that “when the taking is one of a *permanent nature* . . . the time and duration of the invasion is essentially undisputed and manifestly supports the finding of a taking.” *In re Upstream*, 146 Fed. Cl. at 250 (emphasis added). Judge Lettow concluded that defendant took a permanent flowage easement in the plaintiffs’ properties. *Id.* In this case, Section 7-05(b) exists in perpetuity. To date, the Water Manual still includes Section 7-05(b). Pls.’ 266-1 at A441. If the Court applied *Upstream*’s logic and found that Section 7-05(b) effects a permanent right to flood plaintiffs’ properties, then the interim use of such provision constitutes a taking. This squarely meets the definition of a temporary taking “when what would otherwise be a permanent taking is temporally cut short.” *Wyatt*, 271 F.3d at 1097; *Quebedeaux*, 112 Fed. Cl. at 323 (“[I]t is conceivable that a takings might lie where defendant, using a permanent structure, purposely floods a property once and expressly reserves the right to do so in the future.”). Similarly, if the Court held that defendant took plaintiffs property whenever it invoked Section 7-05(b), each use could qualify as a temporary taking.

“Notwithstanding [plaintiff’s] complaints,” defendant continued its deviations despite being warned that it could kill wildlife and disturb timber production on the affected property. *Id.*

Similarly, the subsequent “modification, operation, and maintenance” of Addicks and Barker made it more foreseeable that upstream properties would flood. *In re Upstream*, 146 Fed. Cl. at 255. “As early as the 1940s, the Corps understood that storms of exceptionally large size were possible in the Houston metropolitan area.” *Id.* Accordingly, “it was merely a question of when and how often,” the Buffalo Bayou region would flood. *Id.* at 256. *Id.* By the 1960s, defendant knew that the Reservoirs would likely face much larger pool sizes. *Id.* Defendant later conceded that urban development in downtown Houston would force it to flood areas around the Reservoir to protect downstream properties. *Id.* Furthermore, evidence at trial established that a series of moderate storms could produce a similar effect to Harvey. *Id.*

The Court agrees that flooding from the Induced Surcharges was foreseeable. Defendant possessed flowage maps that charted “with startling precision” which properties would be flooded. ECF No. 266, at 23; Pls.’ 266-1, at A326–31, A452–56. Colonel Zetterstrom, who ordered the surcharges, acknowledged that defendant was “aware of the potential for inundation of structures downstream due to controlled release.” Pls.’ 266-2, at A1182. Mr. Long also knew that the induced flooding would “hurt” property owners upstream and downstream of the Reservoirs. *Id.* at A1148. Unlike *Arkansas Game* where defendant received warnings about deviating from its Water Manual, defendant already knew the consequences of invoking Section 7-05(b). Thus, flooding plaintiffs’ properties “was not just foreseeable—it was *actually foreseen*, and it occurred precisely as predicted by [defendant].” ECF No. 266, at 23 (emphasis added). Therefore, a reasonable person could predict that plaintiffs’ properties could flood through Induced Surcharges.

This case also shares the same historical context as *Upstream*. Defendant enacted legislation to build Addicks and Barker following extreme flooding events in the 1920s and 1930s. Def. Ex. 1, at 2010–11; Def. Ex. 5, at 2247. Defendant explicitly built the Dams to protect downtown Houston from flooding. Pls.’ 266-1, at A22, A162. The fear of downstream flooding became apparent in the latter half of the 20th century, which led to defendant gating all exposed conduits by 1963. *Id.* at A310, A312. It also gradually reduced permitted releases to 2,000 cfs. *Id.* at A24–26, A175, A310, A312. In addition, defendant raised the Dams and installed roller-compacted concrete to combat higher pool levels in the late 1980s. *Id.* at A311, A313.

Still, most of Addicks and Barker’s top pool of record events have occurred since 1990. *See id.* at A180. As upstream development continued, the Corp suggested that it should increase release rates which would result in increased downstream flooding. Pls.’ 266-5, at A2681–82. It further admitted that failing to act would force subject defendant to potential claims for money damages. *Id.* at A2677. Yet, defendant did not purchase flowage easements in downstream properties, increase upstream storage space, or provide additional outlet works. *Id.* at A2679–82. Defendant’s actions culminated in 2012 when it enacted Section 7-05(b) that mandates automatic releases which could flood downstream properties. Pls.’ Ex. 266-1, at A50. Against this backdrop, a reasonable person could anticipate that defendant would eventually flood the downstream properties on a temporary basis. *In re Upstream*, 146 Fed. Cl. at 255–56.

Therefore, the Court concludes that the flooding of plaintiffs' properties was entirely foreseeable.

ii. The Corps Knowingly Flooded Plaintiffs' Properties Through Section 7-05(b).

Alternatively, defendant intended to flood plaintiffs' properties. *See In re Upstream*, 146 Fed. Cl. at 259 (finding intent exists if "defendant intended its physical occupation even if it did not intend to effect a taking.") (quotation omitted).

While persuasive, Texas precedent imposes liability when the government intentionally floods private property. *See Milton*, 36 F.4th at 1160 (citing cases); *see also Tarrant Reg'l Water Dist. v. Gragg*, 151 S.W.3d 546, 555 (Tex. 2004) (citing *City of Dallas v. Jennings*, 142 S.W.3d 310, 314 (Tex. 2004) ("[T]he requisite intent is present when a governmental entity knows that a specific act is causing identifiable harm or knows that the harm is substantially certain to result."); *Harris Cty. Flood Control Dist. v. Kerr*, 499 S.W.3d 803, 807 (Tex. 2016) (imposing liability when the government makes a "conscious decision to subject particular properties to inundation so that other properties [will] be spared."). Courts may also infer defendant's intent if it subjectively foresaw flooding as a "direct, natural, or probable consequence of its action." *See In re Upstream*, 146 Fed. Cl. at 259 (citations and quotations omitted).

Defendant consciously decided to open the floodgates in accordance with Section 7-05(b). ECF No. 262, at 23. The Corps invoked Section 7-05(b) to protect the structural integrity of each Dam. Pls.' 266-1, at A47; Pls.' 266-8, at A3400. Corps personnel uniformly testified that they followed the Water Manual by the book and ran their decision up the chain of command. Pls.' 266-8, at A3389–91, A3402–04, A3383–92. Defendant did so with knowledge of the flowage maps that predicted which properties would flood. Pls.' 266-1, at A136–42. Corp members also reconciled potential releases with daily forecasts of projected rainfall. Pls.' 266-7, at A3169–74; Def. Ex. 9–16. In doing so, Mr. Thomas testified that the Corps "planned to take as much risk in [the] releases as is possible." Pls.' 266-7, at A3173. Defendant also made this decision with knowledge that that properties below the Reservoirs could sustain damages at flowage rates greater than 3,000 cfs. Pls.' 266-1 at A282. During Harvey, those releases combined to reach 13,800 cfs, which defendant knew would adversely impact downstream properties. Pls.' 266-2, A1238, A1253. Thus, the record demonstrates that the Corps knowingly flooded downstream properties. *See In re Upstream*, 146 Fed. Cl. 259 (inferring intent).

Therefore, the Court holds that the Corps intended to flood plaintiffs' properties based on its advanced knowledge of the Induced Surcharge tables, and its decision to abide by the Water Manual.

3. The Induced Surcharges Caused Severe and Catastrophic Damage To Plaintiffs' Properties.

Third, the Court examines the severity of defendant's actions. *See Arkansas Game I*, 568 U.S. at 38; *see also Ridge Line*, 346 F.3d at 1355–56 (reviewing whether the "nature and magnitude" caused "a direct and immediate interference with the use and enjoyment of the land.").

In *Arkansas Game II*, defendant asserted that the plaintiff's property was "part of a floodplain that floods regularly," and the "marginal increase in flooding did not constitute a sufficiently severe invasion" to support a takings claim. *Arkansas Game II*, 736 F.3d at 1374. Unconvinced, the Federal Circuit concluded that "the point [of severity] is that after the deviations began the flooding lasted for significantly longer periods of time and had much more serious consequences than the flooding of the pre-deviation period." *Id.* Such deviations "effected a wholesale change" for supporting timber harvesting and wildlife preservation on the plaintiff's property which went beyond an incremental intrusion of property. *Id.*

On analogous facts, the flooding in *Upstream* diminished the plaintiffs' use and enjoyment of their properties, materially disrupted their lives, devalued their property values, destroyed real and personal property, and displaced them from their homes. *In re Upstream*, 146 Fed. Cl. at 250–52. In opposition, defendant believed that "repairable damage resulting from temporary flooding during a single flood event is not the type of severe impact that can support a claim for compensation under the Fifth Amendment." *Id.* at 251. The Court disagreed. *Id.* While one plaintiff did not experience any flooding inside his house, he still suffered damage to the foundation of his property. *Id.* at 252. Furthermore, related substances and materials that mixed into the floodwater "became putrid, smelling of fecal material and dead animal material and chemicals." *Id.* (citation and quotations omitted). How much water "actually entered the structures [was] not reflective of, and actually much less, than the severity of the water level outside the structures in the lawns." *Id.*

In this case, the Induced Surcharges were severe enough to constitute a taking. Much like *Upstream*, releases under Section 7-05(b) caused substantial interference with plaintiffs' use and enjoyment of their property. *See* ECF No. 266, at 21. Combined releases rose from 6,000 cfs to 13,000 cfs and lasted at varying rates for two weeks. Pls.' Ex 266-2, at A1238, A1252. Peak flows shattered the recommended 2,000 cfs defendant previously said properties along the Buffalo Bayou could accommodate. Pls.' 266-1, at A25–26. The flooding forced plaintiffs to evacuate their properties. Pls.' 266-2, at A696–717. For instance, Aldred left his property on September 29, 2017, before the entryway to his neighborhood became submerged and Cutts left her property by kayak. *Id.* at A697, A702. Plaintiffs also suffered varying levels of inundation at their properties. *Id.* at A662–88. Mr. Hollis estimated that his house received 43–45 inches of water. *Id.* at A678. Mr. Good recalled water reaching 38 to 40 inches, almost to the bottom of his windows. *Id.* at A675. Mr. Hollis testified that 42–44 inches of standing water inundated his home, and Mr. Milton measured four feet-three inches of water in his house. *Id.* at A678, A681. While some properties experienced smaller amounts of first-floor flooding, those amounts still materially interfered with the use and enjoyment of their properties. *See, e.g., id.* at A671, A673.

When Mr. Milton returned to his property by boat, he found his refrigerator floating in his kitchen, and his piano submerged in the living room. *Id.* at A820–21. His clothes "were totally mildewed and everything stank because the sewer water backed up into the house." *Id.* at A810–11. Mr. Silverman found mold covering his walls. *Id.* at A851. He later hired a contractor who removed "the bathrooms, the kitchen, and the Sheetrock, the doors, the trims, the moldings, [and] the cabinets under four feet high." *Id.* at A856. Mr. Good characterized the bottom units of his property as "complete devastation." *Id.* at A776. Following Harvey, the Silverman family faced financial constraints to rebuild their house, and they began looking to purchase another home. *Id.*

at A863. Some of Mr. Milton's neighbors sold their properties and moved out of his neighborhood. *Id.* at A824.

In total, plaintiffs declared \$22 million in damages. Pls.' 266-8, at A3333-56. Mr. Britton reported that his business suffered \$17 million in damages alone. *Id.* at A3185. A local appraiser calculated that plaintiffs' property values declined by "no less than 20 [percent]," from 2017 to 2021. *Id.* at A3358. In addition, plaintiffs suffered losses to their personal property and faced high repair costs. Pls.' 266-2, at A773-883. Some property owners were completely ousted from their properties for up to a year. *Id.* at A770, A890-91, A936, A943-44. Thus, the instant flooding exceeded "a range that [plaintiffs] could have reasonably expected to experience in the natural course of things." *Arkansas Game II*, 736 F.3d at 1375. And while plaintiffs eventually regained access to their property, the Court cannot look past the costly, burdensome, and devastating consequences the Induced Surcharges created.

Therefore, the Court concludes that the flood created by Hurricane Harvey was severe enough to be a taking.

4. The Character Of The Land And Plaintiffs' Reasonable Investment-Backed Expectations Did Not Anticipate Intentional Flooding Of Their Properties.

Lastly, determining the reasonableness of a landowner's expectations is a fact-driven, objective inquiry. *Chancellor Manor v. United States*, 331 F.3d 891, 904 (Fed. Cir. 2003); *Cienega Gardens*, 331 F.3d 1319, 1346 (Fed. Cir. 2003). A court must then examine "the extent to which the [government action] interferes" with those expectations. *See Palazzolo v. Rhode Island*, 533 U.S. 606, 617 (2001); *see Webb's Fabulous Pharmacies, Inc. v. Beckwith*, 449 U.S. 155, 161 (1980) (requiring reasonable investment-backed expectations to "be more than a unilateral expectation or abstract need.") (quotations omitted). *Arkansas Game II* declined to review this last factor because defendant waived its argument at the trial level. 736 F.3d at 1375. But the Supreme Court determined that the plaintiff's land "had not been exposed to flooding comparable to the 1990's accumulations in any other time span either prior to or after the construction of the dam." *Arkansas Game I*, 568 U.S. at 39.

In *Upstream*, the plaintiffs "neither knew, nor reasonably should have known, of the risk posed by the dams." *In re Upstream*, 146 Fed. Cl. at 261. Publicly available information and notifications by local government authorities did not inform the plaintiffs that their properties could flood. *Id.* at 261. Nor did public meetings guarantee effective communication because defendant lacked evidence that the meetings were well-attended or publicized. *Id.* at 263. The Court also found unavailing that subdivision plats and other property documents gave plaintiffs notice when they purchased their properties. *Id.* at 262. Even if purchasers examined the documents "it would take an uncommonly attentive eye to notice and comprehend the import of such a disclosure." *Id.* (quotations omitted). Additionally, Houston's rapidly developing metropolitan area led to "a regular flow of people moving in and out of the area, further reducing the likelihood that new residents adapting to the area would know of the risk." *Id.* at 263.

Once more, plaintiffs have satisfied their burden. Despite being located in a historical flood zone, plaintiffs largely did not know of any previous flooding that reached the inside of their

properties. Pls.’ 266-2, at A493–527. In fact, only a few test properties experienced any flooding prior to Harvey. *Id.* at A626–60. Thus plaintiffs had not “been exposed to flooding comparable” to “any other time span.” *Arkansas Game I*, 568 U.S. 39. It reasonably follows that downstream properties in the Buffalo Bayou region did not anticipate their land would be subject to government-induced flooding through a regulation that mandated automatic surcharge releases. Thus, the character of plaintiffs’ land did not contemplate flooding to the extent caused by the Induced Surcharges.

Defendant’s own policies also failed to create any reasonable investment-backed expectations that plaintiffs could expect that their properties would be intentionally flooded. Beginning in 1964, the Water Manual instructed defendant to keep the “gates closed and under surveillance as long as needed to prevent flooding below the dam.” Pl.’s. Ex. 266-1, at A222. For years, defendant maintained this policy. Pls.’ 266-8, at A2674, A2681, A2714, A3002, A3117. In light of increased development, defendant operated the Reservoirs “strictly to prevent downstream flooding; therefore, the gates remain shut even if pool elevations increase and flood upstream properties.” Pls.’ 266-1, at A181. And after a 2016 flooding event, defendant publicly stated that “[w]e will not open the dam to a point where it will cause flooding downstream.” Pls.’ 266-8, at A3331–32.

Plaintiffs also relied on Addicks and Barker to protect them from flooding. Mr. Cutts believed the Dams were in place to keep floodwaters from “overtaking the land.” Pls.’ 266-2, at A547. From Mr. Hollis’ understanding, “the dams were built to protect us, and we always relied on that theory.” *Id.* at A567. Mrs. Beyoglu thought both Dams provided downstream residents with “clean water.” *Id.* at A559. Mr. Milton recalled his father telling him that the land “wouldn’t have been developed without those dams.” *Id.* at A572. In sum, residents took Addicks and Barker for granted and assumed they “were there to protect that part of town.” *Id.* at A573, A582, A591–92. As for Section 7-05(b), plaintiffs further testified that they were unaware of the regulation. Pls.’ 266-8, at A3333–56. Nor did they anticipate or realize that defendant could flood their properties under that provision. *Id.* At the same time, Corps members could not recall if they ever publicly disclosed that they could flood downstream properties by Induced Surcharges. *Id.* at A3367–69, A3402–04, A3408. These manifestations would not lead a reasonable person to expect defendant would flood downstream properties. Thus, plaintiffs maintained reasonable investment-backed expectations that defendant would not flood their properties. *Arkansas Game I*, 568 U.S. at 14.

As to whether defendant interfered with plaintiffs’ reasonable investment-backed expectations, the Court need not reinvent the wheel. Defendant severely interfered with plaintiffs’ expectations regarding their properties. Plaintiffs bought their homes to live safely and to raise families. Commercial entities bought property to conduct business. But the Induced Surcharges displaced plaintiffs, destroyed real and personal property, devalued their properties, and cost millions in repair costs. Thus, the final factor in the *Arkansas Game* test weighs in favor of a taking.

Therefore, the Court concludes that a temporary taking occurred through defendant’s Induced Surcharges. The subsequent flooding was severe, intentional and foreseeable, and significantly interfered with plaintiffs’ reasonable investment-backed expectations. Accordingly,

the Court hereby **GRANTS** summary judgment in favor of plaintiffs and **DENIES** summary judgment in favor of defendant as it relates to Question 1.

B. Question 2: Whether The Government’s Actions Amounted To A Permanent Physical Taking.

The Court now considers whether the Induced Surcharges qualify as a permanent taking. Plaintiffs contended that Section 7-05(b) in substance acts like a flowage easement that burdens their properties. ECF No. 262, at 14–18. In response, defendant asserted that the infrequent use of Section 7-05(b) and its associated flooding defeats plaintiffs’ claim. ECF No. 277, at 30–31. The parties sparred over their interpretations of the Supreme Court’s decision in *Cedar Point Nursery v. Hassid*, 594 U.S. 139 (2021), and its applicability to this case. The Federal Circuit’s holdings in *Ideker Farms, Inc. v. United States*, 71 F.4th 964 (Fed. Cir. 2023), and *Ablan* also prove instructive. After review, the Court concludes that plaintiffs established a permanent taking.

“There is no difference of kind, but only of degree, between a permanent condition of continual overflow by backwater and a permanent liability to intermittent but inevitably recurring overflows; and, on principle, the right to compensation must arise in one case as in the other.” *Cress*, 243 U.S. at 328. A permanent physical occupation exists even if a particular individual or entity “does not station himself permanently upon the premises.” *Nollan v. California Coastal Comm’n*, 483 U.S. 825, 832 (1987). The Federal Circuit in *Ideker Farms* clarified that *Arkansas Game I* “does not apply to permanently recurring flooding. Instead, such flooding that foreseeably or intentionally results from government action is a categorical physical taking.” *Ideker Farms*, 71 F.4th at 980.

In *Cedar Point*, a California regulation granted agricultural union organizers an explicit “right of access” to an employer’s premises. *Cedar Point*, 594 U.S. at 143. That regulation allowed labor organizations to enter private property for up to 120 days in a calendar year. *Id.* A group of employers asserted that the access regulation amounted to a *per se* physical taking because defendant appropriated an easement. *Id.* at 145. The Court agreed in part and held that the regulation interfered with the plaintiffs’ right to exclude, “one of the most essential sticks in the bundle of rights that are commonly characterized as property.” *Id.* at 149–52 (collecting cases). While the Court did not formally declare the access regulation as an easement, it “followed our traditional rule: Because the government appropriated a right to invade, compensation was due.” *Id.* at 156; *see id.* at 149 (summarizing that “Government action that physically appropriates property is no less a physical taking because it arises from a regulation.”).

On similar facts, defendant in *Ideker Farms* built a series of dams in accordance with federal legislation. 71 F.4th at 971–72. The Corps later synthesized dam operations into a Master Manual, which initially prioritized flood safety first and environmental consequences last. *Id.* at 972. In 2004, defendant amended the Manual to emphasize returning the waterways back to its natural state. *Id.* at 973. This allegedly caused “frequent and severe flooding on Plaintiffs’ farms between 2007 and 2014,” to which “[defendant] has not ceased and does not plan to cease flooding Plaintiffs’ lands.” *Id.* at 973, 980. The Federal Circuit concluded that a permanent taking occurred, noting that while “floodwaters come and go during the year, *i.e.*, are intermittent, [it] does not

negate the existence of a [permanent] taking. Those considerations bear only on the amount of compensation.” *Id.*

Recently, *Ablan* held that defendant in *Upstream* should have foreseen that the Reservoirs would experience pool levels that exceeded government-owned land. *Ablan*, 162 F.4th at 1376. Defendant’s operations allowed it to take “a permanent right of access, akin to an easement in gross,” even though flooding occurred intermittently. *Id.* The court further determined that “[t]here was ample record evidence that the Houston area was prone to large storms.” *Id.* And while “the exact frequency of storms that would flood private property is unknowable,” it was not clear error to hold “that the flooding at issue here was objectively foreseeable and would inevitably occur.” *Id.*

The Court may view whether a permanent taking occurred from two perspectives. First, it may examine whether Section 7-05(b) created physical taking by regulation under *Cedar Point*. Next, the Court may determine whether flooding under Section 7-05(b) amounts to intermittent yet recurring flooding as found in *Ideker Farms*.

1. The Cedar Point Argument.

Plaintiffs posit that Section 7-05(b) “constitutes a *per se* physical taking” to flood plaintiffs’ properties. ECF No. 266, at 16. In their opinion, defendant “unequivocally [took] the right to a flowage easement over” their properties, and the “right to flood private property is legally indistinguishable from the taking of an easement through regulation.” *Id.* at 17–18. In doing so, defendant interfered with plaintiffs’ right to exclude, a fundamental property right. *Id.* at 15–16. And by diminishing that right, defendant physically appropriated their property which does not subject Section 7-05(b) to *Penn Central*’s balancing test. *See id.* at 16. As such, Section 7-05(b) “is no less a physical taking because it arises from a regulation.” *Id.* at 15. The Court agrees.

In practice, Section 7-05(b) allows defendant to flood plaintiffs’ properties if certain conditions are met. Pls.’ 266-1, at A50. Like the plaintiffs in *Cedar Point*, Section 7-05(b) interferes with plaintiffs’ right to exclude, “one of the most treasured rights of [] ownership.” *Cedar Point*, 594 U.S. at 149. Plaintiffs are also left with no recourse to prevent government induced-flooding from encroaching on their properties. *See* ECF No. 266, at 16. In effect, Section 7-05(b) “reserves the right to repeat impoundment” of water on plaintiffs’ properties on a permanent basis. *In re Upstream*, 146 Fed. Cl. at 250, 251 n.20. Additionally, exercising Section 7-05(b) need not occur on a permanent, continuous basis to establish takings liability. *Nollan*, 483 U.S. at 832. As implied from Judge Lettow’s 2019 opinion, an interim use of a permanent right to flood private property amounts to an indefinite encumbrance on said properties. *In re Upstream*, 146 Fed. Cl. at 250.

While the Court need not determine whether defendant took an easement in plaintiffs’ properties, *Cedar Point*, 594 U.S. at 156, *Ablan* commented that such permanent flooding from Addicks and Barker created a “permanent right of access . . . akin to an easement in gross” toward *Upstream* properties. *Ablan*, 162 F.4th at 1376. There, defendant created a right to flood and store water on upstream properties through its actions. *Id.* But in this case, defendant tethered its permanent right to flood downstream properties through Section 7-05(b). Thus, the Court finds

that Section 7-05(b) acts like an easement because it explicitly grants defendant the permanent ability to flood properties in the Buffalo Bayou region as a flood control measure. *See id.* Section 7-05(b) also arguably satisfied defendant's proposal to purchase flowage easements in the 1990s, except without paying plaintiffs just compensation. Pls.' 266-5, at A2680. To date, the Water Manual still contains Section 7-05(b), thereby preserving defendant's ability to flood private property. Pls.' 266-1, at A441. Regardless, since defendant "appropriated a right to invade," such flooding "is no less a physical taking" that is subject to the *per se* rule. *Cedar Point*, 594 U.S. at 149.

In opposition, defendant asserted that *Cedar Point* "carved out temporary flooding from *per se* treatment." ECF No. 277, at 29. Under its interpretation of that case and *Arkansas Game I*, the Supreme Court developed its multi-factor test to "reflect the unique considerations that accompany temporary flooding." *Id.* at 30 (emphasis added). The Court disagrees. Again, defendant retains a permanent right to engage in downstream flooding, albeit under certain conditions. Defendant also argues that *Arkansas Game I* did not evaluate whether a permanent taking occurred when defendant deviated from a similar Water Manual that caused intermittent flooding to private property. *See* ECF No. 266, at 30; *Arkansas Game I*, 568 U.S. at 27–28. However, plaintiffs are free to assert both temporary and permanent takings claims. *Milton*, 36 F.4th at 1163 (instructing this Court to address both theories).

Defendant further contends that the express language of Section 7-05(b) does not "declare any formal entitlement to invade Plaintiffs' properties," "does not authorize any permanent and physical occupation," and "does not grant the public any permanent and continuous right to cross Plaintiffs' properties." ECF No. 277, at 31 (citations and quotations omitted). Unlike other regulations and statutes that qualified as a physical taking, Section 7-05(b) contains pre-requisites that must be satisfied before defendant can open the floodgates. *Compare* Pls.' 266-1, at A50; *with Cedar Point*, 594 U.S. at 143 (granting immediate right to enter plaintiffs' properties); *Loretto*, 458 U.S. at 421 (requiring landowners to allow cable companies to install facilities on private property). But whether conditions allow for releases under Section 7-05(b) impacts how often defendant may use the regulation. That bears on compensation, not liability. *Ideker Farms*, 71 F.4th at 980.

If the Court examined the plain language of Section 7-05(b), then yes, it does not expressly authorize defendant to invade plaintiffs' properties. *See* Pls.' 266-1, at A50. However, when considering Section 7-05(b) in context, the provision empowers defendant to engage in mandatory releases which diminishes plaintiffs' right to exclude. A requirement that a physical taking by regulation must explicitly allow defendant to invade private property seems too harsh a rule and incongruent to real-world realities. Holding along these lines would enable defendant to escape future liability by carefully curated legislative and contractual language.

Therefore, defendant's Induced Surcharge provision acts as a government regulation that physically amounts to a categorical, *per se* taking.

2. Intermittent Yet Recurring Flooding Argument.

The Court also holds that flooding under Section 7-05(b) constitutes permanent yet recurring flooding that will occur “without identifiable end into the future.” *Ablan*, 162 F.4th at 1376 (citing *Ideker Farms*, 71 F.4th at 979); see ECF No. 266, at 18. While defendant invoked Section 7-05(b) for the first time, the Court should not have to wait for another occurrence to find liability. See *Ablan*, 162 F.4th at 1375–76.

Again, the historical development of the Buffalo Bayou watershed is informative. Between 1854 and 1935, the area experienced six major floods. Def. Ex. 1 at 2010. In particular, storms in 1929 and 1935 culminated in catastrophic flooding that led to the creation of Addicks and Barker. *Id.*; Def. Ex. 5 at 2247. The Reservoirs principally worked to reduce flooding downstream in the floodplain region, which included Houston. Def. Ex. 2, at 2055; Def. Ex. 3, at 2140–41; Def. Ex. 5, at 2244. As time passed, defendant decreased allowable releases which increased risks to upstream properties and the areas around both Dams. In response, Defendant contemplated purchasing downstream lands to protect the Houston area. But in the face of exorbitant costs, it elected not to. Pls.’ 266-5, at A2681–82. In 1992, the Corps recognized that failing to act “would mean accepting the risk that substantial numbers of houses will be damaged by rare, severe flood events. . . . [and] [t]he Government *will continue to be subject to potential claims for monetary losses.*” *Id.* at A2677 (emphasis added). These concerns persisted for years before Harvey, and defendant opined that “it might be desirable to increase the allowable release rates from the reservoir . . . and accept some increased duration of downstream flooding” as areas upstream of the Reservoirs developed. *Id.* at A2681–82.

Following Harvey, the *Upstream* Court noted that “recent trends suggest that storms and hurricanes on par with Harvey are becoming increasingly frequent, and the government fails to adequately to account for this increase.” See Pls.’ 266-8, at A3437.⁹ Defendant also admitted that a series of moderate storms could create similar conditions akin to Harvey at the Dams. *In re Upstream*, 146 Fed. Cl. at 256. Mr. Long further testified that the Corps could open the floodgates in the future under similar circumstances. Pls.’ 266-2, at A1152. In his opinion, such flooding could be inevitably recurrent. *Id.* Furthermore, many record pool events have occurred at both Dams since the 1990s. Pls.’ 266-1, at A180. Thus, while “the exact frequency of storms that would flood private property is unknowable,” it is foreseeable that downstream flooding could occur through Induced Surcharges given defendant’s anticipation for an event like Harvey and historical and contemporaneous precipitation trends. See *Ablan*, 162 F.4th at 1376.

Lastly, defendant suggests that the lack of “permanence and absolute exclusivity of a physical occupation” makes the Induced Surcharges temporary. ECF No. 277, at 31–32 (citing *Loretto*, 458 U.S. at 435 n. 12 (1982)). Indeed, our predecessor court has held that one single flood establishes a taking to upstream properties of a dam “but below the contour line to which the dam is designed to impound water.” See *Stockton v. United States*, 214 Ct. Cl. 506, 518–19 (1977).

⁹ The above citation comes from Judge Lettow’s October 28, 2022, just compensation trial opinion. See *In re Upstream Addicks & Barker (Texas) Flood-Control Reservoirs*, 162 Fed. Cl. 495, 523 (2022), *aff’d in part, vacated in part, remanded sub nom. Ablan v. United States*, 162 F.4th 1364 (Fed. Cir. 2025). To avoid confusion with *Upstream*’s liability opinion, the Court resorts to plaintiffs’ pagination of the just compensation opinion in its summary judgment record.

The Court of Claims distinguished flooding in that case from situations where flooding “is downstream of the dam and the damage is an unintended and unwanted result of changes effected by the dam in the downstream flow or consequential and indirect upstream flooding.” *Id.* at 519. Unlike those scenarios where courts found no liability, the Induced Surcharges foreseeably and intentionally resulted in downstream flooding. And much like *Ideker Farms*, the permanency of defendant’s regulations indefinitely interferes with plaintiffs’ property rights. *Ideker Farms*, 71 F.4th at 979–80.

Thus, the Court concludes that plaintiffs have established a permanent physical taking. Therefore, the Court **GRANTS** summary judgment in favor of plaintiffs and **DENIES** defendant summary judgment as it relates to Question 2.

C. Question 3: Whether Plaintiffs Established Causation “When Considering The Impact Of The Entirety of Government Actions That Address The Relevant Risk.”

To establish causation, a plaintiff must show “what would have occurred” if the government had not acted. *St. Bernard Par. Gov’t v. United States*, 887 F.3d 1354, 1362 (Fed. Cir. 2018) (citing *United States v. Archer*, 241 U.S. 119, 132 (1916)). In other words, “absent government action, plaintiffs would not have suffered the injury.” *Id.* When making this inquiry, courts should consider “the impact of the entirety of government actions that address the *relevant risk*.” *Id.* at 1364 (emphasis added).

The parties disagree on two aspects of the causation analysis. First, they dispute what “but-for world” the Court should compare defendant’s actions against. Plaintiffs asserted that the Court should compare the Corps’ decision to flood downstream properties against a world in which it had kept the gates closed. ECF No. 266, at 47–49. By contrast, defendant argues that the Court should analyze its decision against a world in which it never constructed Addicks and Barker. ECF No. 262, at 24–35.

Second, the parties dispute whether the *Hardwicke* exception applies. *See generally John B. Hardwicke Co. v. United States*, 467 F.2d 488 (Ct. Cl. 1972). *St. Bernard* interpreted that exception to apply when a risk-reducing action precedes a risk-increasing action, “the [flood] risk-reducing action would only be considered in assessing causation if the risk-increasing action was contemplated at the time of the [flood] risk-reducing action.” *St. Bernard*, 887 F.3d at 1367 n. 14. At the same time, *Ideker Farms* viewed such exception as determining whether a reasonable landowner at the time of the taking would have expected that a flood risk-increasing action was “probably within the scope of the project . . . from the time the Government was committed to the project.” *Ideker Farms*, 71 F.4th at 982 (citations and quotations omitted). The Federal Circuit released its decision in *Ideker Farms* after summary judgment briefing concluded. This Court gave the parties an opportunity to provide supplemental briefing on the case. *See* ECF No. 451; ECF No. 452; ECF No. 453. Nonetheless, defendant advances that the *Hardwicke* exception amounts to non-precedential dicta that the Court should ignore. ECF No. 277; ECF No. 452. It advocates for the Court to follow the Federal Circuit’s approach in *St. Bernard*. *Id.* Plaintiff contends that the *Hardwicke* exception is precedential, and *Ideker Farms* resolves this issue. ECF No. 266; ECF No. 451.

1. The Proper Baseline For The Court To Analyze Causation Is A World In Which Defendant Kept The Gates Closed During Hurricane Harvey.

Defendant argues that the Court should compare flooding from Section 7-05(b) to a world without the Dams for causation purposes. Plaintiff believes that the Court should entertain a scenario in which the floodgates remained closed. The Court adopts plaintiffs' approach.

In *Ideker Farms*, the Federal Circuit affirmed the lower court's decision to measure defendant's actions before and after the 2004 Changes to its Water Manual. *Ideker Farms*, 71 F.4th at 981–82. There, defendant's alterations "led to more increased and more severe flooding than would have occurred had these Changes not been made." *Id.* at 981.

However, *Arkansas Game II* held that defendant's deviations from its Water Manual caused a "substantial increase in the number of days of growing season flooding" when compared to: (1) the period between 1953 and 1993; and (2) before the construction of the Clearwater dam. *Arkansas Game II*, 736 F.3d at 1371. At oral argument, the parties agreed that the proper baseline to assess causation "would be between the flooding that occurred prior to the construction of Clearwater dam and the flooding that occurred during the deviation period." *Id.* at 1372 n. 2. But since the "water release policy under the Manual largely mimicked [] pre-dam water flows," both baselines produced the same result. *Id.*

According to defendant, plaintiffs "cherry-picked" its isolated decision to invoke Section 7-05(b) for causation purposes. ECF No. 262, at 29–30. It proposed that the Court should evaluate causation by considering: (1) the construction of Addicks and Barker; (2) the gating of two conduits at each Dam in 1948 to reduce uncontrolled flows in the Buffalo Bayou region; (3) the gating of all conduits in 1963 to protect downstream development; (4) operations changes to reduce downstream flows following channel encroachment; (5) issuance of a water control manual to govern reservoir operations after the gating of all the dam conduits or outlets; and (6) the decision to close the gates as Hurricane Harvey approached Houston. ECF No. 277, at 4. Defendant opined that its actions were undertaken in furtherance of the Buffalo Bayou and Tributaries Project which addressed the "relevant risk . . . of flooding along Buffalo Bayou in Houston." ECF No. 262, at 29–30.

For support, defendant cited Supreme Court precedent that adopted its preferred but-for world. *See Archer*, 241 U.S. at 128 (1916) (analyzing whether construction of a dike that led to gravel and sand deposit to develop on plaintiff's land was a taking); *Sanguinetti*, 264 U.S. at 147 (determining whether construction of a government canal effected a taking from the associated flooding); *United States v. Sponenbarger*, 308 U.S. 256, 262 (1939) (involving alleged taking in which levees diverted water to plaintiff's land which caused flooding). The Court does not dispute these findings. However, defendant's precedent differs from this matter in one crucial aspect. The plaintiffs in those cases challenged defendant's construction and operation of flood control projects, not a discrete decision made by Corps members to comply with a regulation. Unlike their *Upstream* counterparts, plaintiffs do not assert that the construction and general maintenance of the Dams caused flooding to their properties. *In re Upstream*, 146 Fed. Cl. at 255. Instead, plaintiffs attributed flooding to their properties from defendant's decision to invoke Section 7-05(b).

As such, *Ideker Farms* is the most appropriate authority to follow. Since the alleged taking there occurred when defendant amended its Water Manual, the Federal Circuit narrowed its scope for causation. *See Ideker Farms*, 71 F.4th at 982. In this case, a taking occurred when defendant opened the floodgates, which sets the Court’s baseline of analysis. The Court acknowledges that *Arkansas Game II* compared flooding against a world in which the Corp never built its flood-control project. *Arkansas Game II*, 736 F.3d at 1371. But it would have reached the same result if it compared defendant’s deviations to the period beforehand. *Arkansas Game II*, 736 F.3d at 1372 n. 2. Those parties also proceeded without the benefit of *Ideker Farms*. And as a case-specific inquiry, the Court’s proposed baseline better suits this matter. If the Court considered every action defendant undertook from the past 80 years, it would frustrate the causation analysis. That inquiry would include events and actions that share an attenuated relationship with defendant’s decision to intentionally flood plaintiffs’ properties through Section 7-05(b). Defendant’s preferred case, *St. Bernard*, reiterated that courts must consider “the impact of the entirety of the government actions that address the *relevant risk*.” *St. Bernard*, 887 F.3d at 1364 (emphasis added). The relevant risk here is not mere flooding. Rather, the risk encompasses intentional induced flooding from an express regulation that defendant followed. *Compare* Pls.’ 266-1, at A50; *with Ideker Farms*, 71 F.4th at 982. Had the Corps not acted, or invoked Section 7-05(b), the question becomes whether plaintiffs’ properties would have sustained more damage. *St. Bernard*, 887 F.3d at 1362. Therefore, the Court will assess causation against a world in which the gates remained closed.

2. The *Hardwicke* Exception Is Precedential And Is Appropriate To Apply Under The Circumstances.

Plaintiffs argue that this matter “falls squarely within the *Hardwicke* rule.” ECF No. 266, at 36–47, 49; ECF No. 281, at 6–11. In particular, plaintiffs identified the Corps’ decision to close Addicks and Barker’s floodgates as the risk-reducing action. *See* ECF No. 266, at 46–47. This preceded defendant’s decision to invoke Section 7-05(b) and flood plaintiffs’ properties. *Id.* In opposition, defendant challenged *Hardwicke*’s precedential value. *See* ECF No. 262, at 33–34; ECF No. 277, at 9–14.¹⁰ Defendant further opined that its affirmative act under plaintiffs’ scenario “includes the construction of the Project in the 1940s, the operation of the Project to reduce flood risk below the dams since that time, as well as the closing of the gates at the onset of Hurricane Harvey, not just the opening of the gates during that storm.” ECF No. 262, at 34. Resolving this issue turns on examining how courts have applied *Hardwicke*.

¹⁰ In 1982, the Federal Circuit adopted the jurisprudence developed by its predecessor court. *S. Corp. v. United States*, 690 F.2d 1368, 1371 (Fed. Cir. 1982). The Federal Circuit has consistently held that “[a] prior precedential decision on a point of law by a panel of this court is binding precedent and cannot be overruled or voided unless or until the court sits *en banc*.” *Sacco v. Dep’t of Justice*, 317 F.3d 1384, 1386 (Fed. Cir. 2003) (citing *Newell Co. v. Kenney Mfg. Co.*, 864 F.2d 757, 765 (Fed. Cir. 1998) (subsequent history omitted)). And “[t]here can be no question” that the Court of Federal Claims is required to follow Federal Circuit and Court of Claims precedent. *Coltec Indus., Inc. v. United States*, 454 F.3d 1340, 1353 (Fed. Cir. 2006). In this case, the Court of Claims issued its opinion in *Hardwicke* which the Federal Circuit subsequently adopted. Thus, the Court may use the exception as Federal Circuit or Court of Claims precedent. *Coltec Indus.*, 454 F.3d at 1353. Furthermore, no Federal Circuit decision has overruled *Hardwicke* in an *en banc* opinion. ECF No. 281, at 8. Therefore, the Court holds that the *Hardwicke* exception is not merely dicta and carries precedential value.

The *Hardwicke* exception arises from *United States v. Miller*, 317 U.S. 369 (1943). There, the Court considered whether landowners could receive additional value from defendant's commitment to a railway re-location project. *Id.* at 377. That answer depended on "whether [] *respondent's land were probably within the scope of the project from the time the Government was committed to it.*" *Id.* (emphasis added). If the landowner's parcels fell within the scope of the project, they could not receive additional value. *Id.* at 378; *see also United States v. Reynolds*, 397 U.S. 14, 21 (1970).

In *Hardwicke*, the United States and Mexico signed an accord in 1932 "which provided for flood control works along the lower Rio Grande Valley." *Hardwicke*, 467 F.2d at 489. That plan contemplated two diversion dams that would divert water from Rio Grande into Mission Inlet and to a floodway at times of flooding. *Id.* A subsequent 1944 treaty "constituted" the 1932 plan which also included "three international storage dams." *Id.* In 1950, the original plan became modified and proposed constructing one diversion dam instead of two dams. *Id.* In 1952, defendant constructed Falcon Dam, a storage dam, that reduced flooding at the plaintiffs' property "from once every two years to once every ten years." *Id.* Seven years later, defendant began operating Anzalduas Dam, a diversion dam, which increased flooding to once every seven or eight years. *Id.* In finding that no taking occurred following a 1967 flooding event, the Court of Claims opined that "[b]efore 1950 a buyer of land . . . knew or should have known that the [1932] *flood control plan* agreed upon with Mexico contemplated the construction of both storage and *diversion* dams." *Id.* at 490 (emphasis added). Since 1932, "Mission Inlet had been viewed as a strategic means of diverting floodwater." *Id.* Accordingly, constructing Anzalduas Dam "did not alter the potential burden on plaintiffs' property since defendant continued to rely on Mission Inlet for diversion, as *the 1932 plan had done.*" *Id.* (emphasis added).

Decades later, *Ideker Farms* applied *Hardwicke's* reasoning but reached a different result. There, Congress passed the FCA of 1944 which authorized construction of dams to reduce flooding along the Missouri River. *Ideker Farms*, 71 F.4th at 971. That "Mainstem System" was completed in 1967. *Id.* In 1945, Congress also passed the Bank Stabilization and Navigation Project that implemented other measures to control flooding. *Id.* at 971–72. The Corps consolidated its operations into a Water Manual in 1979. *Id.* at 972. When applying *Hardwicke* to defendant's 2004 changes to its Manual, the Federal Circuit considered: "[w]hether a reasonable property owner at the time the taking occurred would have understood the 2004 Changes to be 'probably within the scope of' the 1944 FCA 'from the time the Government was committed to the project.'" *Id.* at 982. In doing so, the Federal Circuit held that a reasonable landowner would not have anticipated the 2004 Changes were contemplated under the 1944 FCA. *Id.* at 983. Since that legislation intended for "people to be protected from flooding . . . agricultural production increased and developers moved in." *Id.* at 984. Based on these expectations, the 2004 changes ran "antithetical to the original FCA priorities." *Id.*

On the other hand, *St. Bernard* interpreted *Hardwicke* as suggesting that "if the risk-reducing government action preceded the risk-increasing action, the risk-reducing action would only be considered in assessing causation if the risk-increasing action was 'contemplated' at the time of the risk-reducing action." *St. Bernard*, 887 F.3d at 1367 n. 14 (citation omitted). There, defendant initially constructed a navigation channel in New Orleans that "increased storm surge along the channel." *Id.* at 1357. Congress then authorized funding for a subsequent Barrier Plan

called the LPV project which reduced flooding. *Id.* at 1358. During Hurricane Katrina, levees constructed from the LPV project breached and contributed to flooding private property. *Id.* Under these circumstances, the court opined that *Hardwicke* “would only be relevant if the LPV project had been constructed before MRGO.” *Id.*

After careful review, the Court believes that *Hardwicke*’s applicability does not simply turn on the ordering of defendant’s actions. Indeed, *Hardwicke* involved intermediate risk-reducing actions such as the 1944 treaty and 1952 construction of Falcon Dam. *Hardwicke*, 488 F.2d at 490–91. *Ideker Farms* also alluded to defendant’s Mainstem System, the BSNP, and its Master Manual from 1979. *Ideker Farms*, 71 F.4th at 981–84. But both courts tailored their analyses toward comparing the alleged taking (risk-increasing action) to the original project. While Falcon Dam decreased flooding in Mission Inlet, the *Hardwicke* court instead focused its attention on whether a reasonable landowner could have contemplated the construction of diversion dams in 1932. *Hardwicke*, 488 F.2d at 490–91. This included reconciling its decision with defendant’s 1950 modification to the 1932 flood control plan that changed how many diversion dams would be constructed.¹¹ Similarly, the Federal Circuit in *Ideker Farms* did not consider the Mainstem System, BSNP, and defendant’s 1979 version of its Manual in its analysis. Instead, it determined whether a reasonable property owner would have anticipated that the 2004 changes were contemplated in the original 1944 FCA. *Ideker Farms*, 71 F.4th at 981–84. As for *St. Bernard*, the Federal Circuit admitted that the parties did not raise *Hardwicke* as an issue. *St. Bernard*, 887 F.3d at 1367 n. 14. This Court does not purport to resolve an issue in another case.¹²

Therefore, the Court concludes that it must determine whether a reasonable property owner could have foreseen that Section 7-05(b) was “within the scope of the project . . . *from the time the Government was committed to the project.*” *Ideker Farms*, 71 F.4th at 982 (emphasis added). In other words, could a reasonable property owner at the time of Harvey have foreseen that Section 7-05(b) “was probably within the scope of” the Buffalo Bayou and Tributaries Project in 1938. The Court thinks not.

Under plaintiffs’ “erroneous” causation standard, defendant opined that “[t]he only question [] is whether the allegedly risk increasing action—opening the gates during Harvey—was contemplated at the time of the risk-reducing actions.” ECF No. 277, at 14–15. Those risk-reducing actions included the “construction and operation of the Project, [and] the closing of the gates as the storm approached.” *Id.* at 15. But as discussed in *Hardwicke* and *Ideker Farms*, the Court should consider defendant’s decision to open the floodgates against its original project.

¹¹ The Court in *Hardwicke* did mention that “there never was a time when an owner near Mission Inlet could have directly benefited from Falcon [Dam], yet have been unaware that Anzalduas [Dam] would arise in fulfillment of the same scheme.” While the Court mentions Falcon Dam, its conclusion acknowledged that a reasonable landowner should have been aware of Anzalduas Dam which arose from the same, original flood control measure.

¹² *St. Bernard* opined that “the risk-increasing action (MRGO) was constructed before the risk-reducing action (LPV project), and in any event, MRGO was certainly contemplated when the LPV levees were built.” There, the court appears to be prioritizing the ordering of defendant’s actions. If it applied *Hardwicke* and *Ideker Farms*’ approach, it would assess whether a reasonable landowner would have expected that the LPV levees, which allegedly caused a taking, were contemplated by the original MRGO project.

Thus, defendant's proposed risk-reducing actions do not factor into this Court's *Hardwicke* analysis.¹³ Defendant also contests that plaintiffs "have not identified any physical modifications to the existing Project, impacts from a new project, or substantive changes to the Project's [Water Manual]." ECF No. 452, at 5. According to defendant, *Ideker Farms* rested on significant, unanticipated changes to defendant's Master Manual and plaintiffs failed to identify an "intervening risk-increasing project." *Id.* at 3 (quotations omitted).¹⁴ As such, since the Buffalo Bayou and Tributaries Project (which became authorized by the Rivers and Harbors Act of June 20, 1938) only contemplated flood control "there is nothing 'distinct' about the history of this Project that would support departure from the established legal standard for determining causation in this case." *Id.* at 4. The factual circumstances from another case do not change this Court's analysis. *Ideker Farms* provided a standard for lower courts to follow.

Defendant further asserted that "[t]he potential that the Corps would open the dam gates during a large enough storm has *always* been contemplated *since the gates were installed* on all the conduits." ECF No. 262, at 33 (emphasis in original). "Given that timing, such releases—under what is currently called the induced surcharge regulations of the Manual—were contemplated from the very start." ECF No. 277, at 16. In addition, modifications of the Corps' Water Manual from 1962 to 2012 "merely reinforces the vast benefits Plaintiffs have already received from the Project." ECF No. 277, at 17. Defendant's arguments are not persuasive. In the aggregate, these contentions charge that the Corps had contemplated flooding akin to Section 7-05(b) since the early 1960s. *See* ECF No. 262, at 33; ECF No. 452, at 4. However, *Hardwicke* addresses a reasonable landowner's expectations at the time defendant committed to the project, not a regulation enacted 24 years after. While defendant enacted a similar, yet distinct, "Emergency regulation" in its 1962 Water Manual, the Corps' subsequent development of its Water Manual and provisions within its original Manual does not factor into *Hardwicke* here. *See Ideker Farms*, 71 F.4th at 982.

Lastly, the Court concludes that a reasonable landowner could not contemplate Section 7-05(b) was within the scope of the project. Defendant took issue with plaintiffs' use of their subjective knowledge and expectations to establish their case. ECF No. 277, at 16–17. Specifically, plaintiffs' expectations "premised on something other than the actual manuals under which the Corps operates the dams," and the notion that "the Corps would always keep the dam gates closed" was objectively unreasonable. *Id.* at 17. To support their position, plaintiffs cited their own testimony and representations made by the Corps about downstream flooding. ECF No. 266, at 45–46. Both viewpoints are improper. Once more, this Court must address whether a reasonable landowner would have anticipated that Section 7-05(b) was "probably within the scope of the project *from the time the Government was committed to* the project. *Ideker Farms*, 71

¹³ *Ideker Farms* acknowledged that *St. Bernard* addressed an initial risk-increasing action followed by a subsequent risk-reducing action. *Ideker Farms*, 71 F.4th at 985. It does not expound on this distinction. Additionally, this observation did not change or alter its conclusion when comparing the 2004 Changes to the 1944 FCA.

¹⁴ The 2004 Changes arose from discussions with the Fish and Wildlife Service and litigation in federal district court in the 1990s and early 2000s. *See Ideker Farms*, 71 F.4th at 972–73. If defendant asserted that such Changes were unexpected when compared to the 1944 FCA, the Court agrees. And while the 2004 Changes materially departed from its 1979 predecessor, the court in *Ideker Farms* did not consider this fact in its *Hardwicke* analysis.

F.4th at 982 (emphasis added). In 1938, the Buffalo Bayou and Tributaries Project focused on providing “complete control of floods on the Buffalo Bayou watershed and the protection” of Houston. Def. Ex. 1, at 2007. Houston sits on a historical floodplain and experienced a string of major precipitation events. Def. Ex. 1, at 2010–11; Def. Ex. 4, at 2215; Def. Ex. 56; Def. Ex. 57. Congress then enacted legislation to construct Addicks and Barker because of persistent flooding that devastated Houston’s metropolitan area. In the following decades, areas upstream, downstream, and around Addicks and Barker became densely populated with residential and commercial properties. *See Ideker Farms*, 71 F.4th at 984. Since Section 7-05(b) runs “antithetical to the original” priorities of the project, “it stands to reason that . . . property owners[] would not have contemplated” an Induced Surcharge regulation with pre-set conditions could flood their properties. *Id.* Doing so would undercut a primary goal for building Addicks and Barker—to protect downstream properties from flooding.

Therefore, the Court concludes that the *Hardwicke* exception applies. The Court will not consider defendant’s prior risk-reducing actions when addressing causation.

3. Plaintiffs Established that Their Properties Experienced More Flooding Than If Defendant Had Kept the Gates Closed.

With the above issues resolved, the Court may now determine whether plaintiffs’ properties experienced greater flooding due to the Induced Surcharges than if defendant had kept the gates closed.

Both parties submitted expert testimony. Mr. Bardol measured flooding based on what actually occurred during Harvey and a hypothetical “gates closed” scenario. PX 14, at A1791. Mr. Bardol used the same models the Corps, the Harris County Flood Control District, and FEMA would have used at the time of Harvey. Trial Tr., at 185:24–186:2; *see* PX 14, at A1791–94. His methodology included a modified HEC-HMS hydrologic model to “evaluate and quantify precipitation-only flows within Buffalo Bayou.” PX 14, at A1791. He also selected a related HEC-RAS hydraulic model to predict inundation depths. *Id.* at A1791–92. The hydraulic model tracked how much water would flow around the ends of the auxillary spillways and back into the Buffalo Bayou. Trial Tr. at 187:11–188:6. Mr. Bardol’s methodology also included 2D modeling to gain a “general understanding of downstream flow rates and inundation depths” and a 1D model to “simulate the baseline conduit as it occurred during Hurricane Harvey and approximate the water surface elevation along Buffalo Bayou.” PX 14, at A1792–93. In addition, he relied on observed data provided by property owners, USGS gauge information, and other data produced by federal agencies. *Id.* at A1793–94. According to Mr. Bardol, observed data helps confirm accuracy when modeling scenarios like Harvey. Trial Tr. at 189:11–16.

On the other hand, Dr. Nairn modeled: (1) flooding during Harvey; (2) a gates closed scenario; (3) a gates open scenario; and (4) if defendant had never built the Dams. *See generally* DX 469; DX 522. Dr. Nairn employed a similar methodology to Mr. Bardol that produced similar results. Trial Tr. at 993:25–994:3, 184:19–185:11. His report took into account rainfall, model topography, hydrologic losses, roughness of the ground, and hydraulic structures. *See* DX 469, at BAIRD0000801–13. After considering four models, Dr. Nairn selected the TELEMAT model to simulate each scenario. Trial Tr. at 1002:16–22. Dr. Nairn chose this open-source model in large

part because it produced faster results, and it “can consider spatially and temporally varying rainfall.” *Id.* at 1002:23–1003:18. A French company developed the TELEMAT Model and it does not appear to be commonly used by federal agencies. *Id.* at 188:12–21.

In *Upstream*, the Court previously found Dr. Nairn’s analysis to be less persuasive than the plaintiffs’ expert. *In re Upstream*, 146 Fed. Cl. at 257. There, Dr. Nairn allegedly failed to incorporate observed data into his models, and his conclusions appeared to agree with the plaintiffs’ expert. *Id.* at 257–58. Here, this Court already concluded that the proper baseline to assess causation is to compare actual flooding from Harvey against a world in which defendant kept the gates closed. Thus, the Court need not address Dr. Nairn’s models that predicted flooding without Addicks and Barker and his gates open scenario. With respect to a gates closed scenario and actual Harvey, both experts largely reached similar conclusions.

Mr. Bardol concluded that no flooding would have occurred if defendant kept the gates closed at the following properties: (1) Milton; (2) Shipos; (3) Memorial SMC; (4) Good Resources; (5) Aldred; (6) Hollis; (7) Silverman; (8) Godejord; (9) Cutts; and (10) Beyoglu. *See* ECF No. 576, at 18; PX 14, at A1819–24; Trial Tr. at 192:14–18; 193:23–194:5; 195:3–7. Dr. Nairn attributed peak flooding from Milton to Beyoglu to the Induced Surcharges. Trial Tr. at 1087:13–18. Except for a small discrepancy in the Aldred property, eight of the first nine properties would not have experienced any first-floor flooding under his gates closed scenario. *Id.* at 1088:7–12. Since both experts do not dispute that increased flooding occurred at those nine properties, no further discussion is warranted. However, the Court must take a closer look at Aldred, Azar, and Welling’s properties.

As for the Aldred property, Mr. Bardol believed that no flooding would have occurred had the gates remained closed. Trial Tr. at 193:10–12. Dr. Nairn modeled that Aldred would have received 0.4 feet of flooding in that same scenario. *See* DDX 3, at 23. Since Dr. Nairn concluded that Aldred’s property experienced 1.5 feet of flooding during Harvey, the experts agreed that Aldred sustained greater flooding due to the Induced Surcharges than if defendant had kept the gates closed. *Id.* at 23. Therefore, plaintiffs established causation for Aldred’s property. When reviewing the Azar property, Dr. Nairn concluded that it experienced the same amount of flooding under either scenario due to local rainfall. *Id.*; Trial Tr. at 1052:19–22. On the other hand, Mr. Bardol opined that “a substantial increase in duration of inundation (on the order of 12 days)” at Azar’s property resulted from such flooding. PX 14, at A1825. Similarly, Dr. Nairn modeled that Azar’s property would have flooded almost nine days less had defendant kept the gates closed. DDX 3, at 27. In this case, since Azar’s property flooded for greater duration due to the Induced Surcharges, causation is established.

Finally, Dr. Nairn again concluded that local rainfall caused peak inundation at the Welling property. Trial Tr. at 1059:19–22. Mr. Bardol also determined that Welling’s property experienced some flooding prior to the Induced Surcharges. PX 14, at A1818. He also opined that based on “testimony and general trends of the USGS gauge,” an increase in flooding on August 29, 2017, “could reasonably be the result of the induced surcharge releases.” PX 14, at A1826. According to Mr. Bardol, Welling’s property experienced greater duration of flooding under a gates closed scenario as well. *Id.* at A1802, A1818. During trial, defendant argued that Mr. Bardol’s conclusion “doesn’t add up” because he found that a nearby property did not satisfy causation. Trial Tr. at

362:19–363:3. In response, Mr. Bardol noted that Dr. Nairn “doesn’t provide a narrative of each these properties. He just has a table of elevations.” Trial Tr. at 194:24–25. Similar to Judge Lettow’s conclusion, this Court finds that Mr. Bardol provided more reliable testimony than Dr. Nairn. *In re Upstream*, 146 Fed. Cl. at 257. Here, Dr. Nairn did not provide results for his gates closed scenario in his downstream report. Trial Tr. at 1064:10–16, 1066:10–25. Defendant’s counsel apparently directed him to not include such results in his downstream report. *Id.*

When addressing each property, Mr. Bardol used a generally accepted methodology to reach his conclusions unlike Dr. Nairn. Trial Tr., at 185:24–186:2. While data of flows past Piney Point became less reliable, Mr. Bardol leaned on observed testimony when reaching his conclusions. *Id.* at 353:4–19. Instead of adjusting his model, Mr. Bardol believed that “there was good reporting at this area” to rely on observed conditions. *Id.* at 369:3–24. On the other hand, Dr. Nairn relied on his modeling without further explanation. “While modeling can be a useful tool for . . . analyzing hypothetical outcomes and at times may be able to provide more sophisticated insights than even real-time data,” Dr. Nairn did not confront facts that could undermine his opinions. *In re Upstream*, 146 Fed. Cl. at 257 (finding Dr. Nairn’s report less persuasive for analogous reasons). For instance, Mr. Lindeburg testified that flooding began at the Welling property on August 28, 2017. PX 14, at 1826. Mr. Lindeburg also observed that flooding on August 29, 2017, rose to the “doorjamb” on Welling’s property. Pls.’ 266-2, at A695. None of those facts appeared to be considered by Dr. Nairn. Thus, the Court finds that plaintiffs presented sufficient evidence to establish causation at Welling’s property.

Therefore, the Court holds that plaintiffs established that their properties suffered greater flooding due to defendant’s actions than if defendant had never opened the floodgates. As such, the Court finds in favor of plaintiffs as it relates to Question 3.

D. Question 4: Whether The Government May Invoke The Necessity Doctrine As A Defense.

Lastly, the Court rounds out the Federal Circuit’s questions by answering whether the necessity doctrine relieves defendant from liability. Defendant asserted that Harvey’s unprecedented and record-setting rainfall constituted an actual emergency. *See generally* ECF No. 577; ECF No. 581. According to defendant, Harvey tested Addicks and Barker’s storage capacity, created unacceptable risks of dam failure, and endangered life and property. *Id.* In response, plaintiffs contended that the Dams exhibited no signs of imminent failure and the Water Manual and EAP failed to create conditions sufficient for an emergency. *See generally* ECF No. 576; ECF No. 580. After trial, the Court concludes that defendant cannot protect itself by claiming necessity.

The necessity doctrine absolves the Government “of liability for the destruction of real and personal property . . . to prevent” or “forestall grave threats to the lives and property of others.” *Lucas*, 505 U.S. 1003, 1029 n. 16 (1992) (quoting *Bowditch v. City of Boston*, 101 U.S. 16, 18–19 (1880)). In other words, “the [necessity] defense requires both an actual emergency and an imminent danger that is actually necessary.” *TrinCo Inv. Co. v. United States*, 722 F.3d 1375, 1380 (Fed. Cir. 2013); *see In re Upstream*, 146 Fed. Cl. at 264 (citations and quotations omitted) (separating the test into three elements). As prerequisites, Supreme Court precedent “has consistently held that the doctrine of necessity may be applied *only* when there is an *imminent*

danger and an *actual emergency*.” *TrinCo Inv. Co. v. United States*, 722 F.3d at 1378 (Fed. Cir. 2013) (emphasis added). Those requirements “are specific, but somewhat subjective in their definition.” *TrinCo Inv. Co. v. United States*, 130 Fed. Cl. 592, 599 (2017); *see id.* at 601 (“If those two prerequisites are satisfied, the court turns to the “actually necessary” component of the necessity defense.”). Whether government action was actually necessary “must be measured *at the time of the actual emergency and imminent danger*, not in hindsight.” *Id.* at 601 (emphasis in original).

Necessity arises “in times of imminent peril—such as when fire threatened a whole community,” or during wartime. *United States v. Caltex (Philippines), Inc.*, 334 U.S. 149, 154 (1952) (destroying oil depots in the face of an imminent Japanese bombardment during World War II); *Bowditch*, 101 U.S. at 18–19 (burning houses to create firebreaks during a city-wide fire). However, courts should refrain from expanding the scope of necessity for “any of [defendant’s] actions so long as they are part of an effort” to protect the general public. *TrinCo*, 722 F.3d at 1378 (declining to grant summary judgment when defendant burned portions of plaintiff’s property in anticipation of a fire spreading). Indeed, “[t]he terse language of the Fifth Amendment is no comprehensive promise that the United States will make whole all who suffer from every ravage and burden” of government action. *Caltex*, 334 U.S. at 155.

The Court in *Upstream* rejected defendant’s necessity defense “when the flooding that occurred was the direct result of calculated planning.” *In re Upstream*, 146 Fed. Cl. at 264. According to the Court, emergency “refers to a state of things *unexpectedly arising*.” *Id.* (emphasis in original). Since defendant knew that a storm like Harvey would occur and that flooding would impact upstream properties, the “invasion alleged here was by no means unexpected.” *Id.* As such, “defendant cannot now claim that this harm was unavoidable when it planned for years to impound floodwaters onto plaintiffs’ properties.” *Id.* *Ablan* further held that the flooding was not “in response to an unforeseeable exigency” or protected a “landowner from activities akin to public nuisances.” *Ablan*, 162 F.4th at 1378. Instead, defendant “allocated the location of water between private citizens. In doing so, it aided some property owners (downstream residents) and harmed others (upstream residents).” *Id.*

Defendant devoted much of its post-trial briefing to address the reasonableness of its actions. *See* ECF No. 577, at 20–30; ECF No. 581, at 20–27. Plaintiffs conceded that they “have never taken the position that the Government’s actions were unreasonable.” ECF No. 580, at 5. Thus, the Court need not analyze whether the Induced Surcharges were “actually necessary.” *Id.* But defendant must first establish that an actual emergency and imminent danger existed for necessity to apply. *See TrinCo*, 722 F.3d at 1380. In doing so, the Court may evaluate whether those “prerequisites” existed with hindsight. *TrinCo*, 130 Fed. Cl. at 601. The Court now concludes that no imminent danger or actual emergency occurred during Harvey.¹⁵

¹⁵ Plaintiffs asserted that necessity becomes relevant when defendant must make “last-minute decisions to sacrifice property that is likely to be destroyed anyway.” ECF No. 580, at 6. Defendant averred that this “bizarre” logic would make any federally planned response to life-or-death events a non-emergency. ECF No. 581, at 7. The Court finds plaintiffs’ characterization unworkable, but defendant’s concerns too extreme. For instance, defendant in *Caltex* deliberated for days before it destroyed oil facilities in the Philippines. *See Caltex*, 344 U.S. at 154–55. This “planned” measure arose from the unexpected attack on Pearl Harbor, which initiated a string of military campaigns across Asia. *Id.* In that context,

To begin, defendant stipulated that it followed the Water Manual, which included Section 7-05(b). ECF No. 548, at ¶ 80; *see also* Trial Tr. at 148:5–149:5, 661:10–663:2; 828:17–829:12; JX 53 at USACE016691. The Corp enacted Section 7-05(b) in 2012, approximately five years before Harvey. ECF No. 548, at ¶ 63. In application, when pool levels exceed 101 feet NAVD 1988 at Addicks and 95.7 feet NAVD 1988 at Barker, “reservoir releases *will be made* in accordance with the induced surcharges regulation schedules.” *see* ECF No. 548, at ¶¶ 68, 80 (emphasis added). According to the Corps, Induced Surcharges are used to “restore storage capacity in the reservoirs” and to “reduce risk of failure to the structures.” Trial Tr. at 867:20–22. However, those releases occur at elevations below the spillway design flood, the maximum amount each Reservoir was designed to handle. Similar to *Upstream*, defendant’s “calculated planning” to flood downstream properties does not qualify as an emergency. *In re Upstream*, 146 Fed. Cl. at 264. In effect, defendant allocated flooding between upstream and downstream residents, which benefitted some property owners to the detriment of others. *See Ablan*, 162 F.4th at 1378. Here, defendant cannot retroactively claim necessity “when it planned for years to impound floodwaters onto plaintiffs’ properties.” *In re Upstream*, 146 Fed. Cl. at 264. Absent proof that the Dams were failing, the Induced Surcharges acted more akin to “precautionary steps that [were] triggered . . . before any genuine emergency could arise.” ECF No. 576, at 4 (emphasis added) (citing Trial Tr. at 867:18–22; 149:20–24).

Additionally, defendant argues that Induced Surcharges occur under emergency situations which makes Section 7-05(b) not an “ordinary operating measure.” ECF No. 577, at 7 n.7; *see* ECF No. 576, at 4 (conceding defendant’s point but denying that Section 7-05(b) qualifies as an emergency measure). Indeed, defendant flooded downstream properties by using Section 7-05(b) for the first time in Addicks and Barker’s history. Trial Tr. at 629:16-19, 171:20-172:5. In this context, defendant’s actions do not seem “ordinary” or “normal.” ECF No. 577, at 7 n. 7. At the same time, Mr. Long previously testified that the Water Manual only provided guidance on standard operations. Trial Tr. at 948:8–12. Regardless, the Court must examine the conditions at Addicks and Barker, not labels used by the parties. *TrinCo*, 130 Fed. Cl. at 599. Using arbitrary and pre-set definitions of what or may not constitute an emergency would impermissibly expand the scope of necessity to include actions in support of a general effort to protect the public. *See TrinCo*, 722 F.3d at 1378. In this case, if the Dams faced no threat of failure, it appears less likely that an actual emergency occurred. Without more, defendant’s use of a regulation that ordered automatic flooding fails to establish an actual emergency. ECF No. 548, at ¶¶ 68, 80.

Much of defendant’s trial testimony addressed the harrowing accounts of Harvey. Corps personnel uniformly believed that conditions amounted to an emergency. *See* Trial Tr. at 535:22–25, 712:1–2, 870:17–21, 881:20–882:4, 557:16–17, 558:5–11. Colonel Zetterstrom testified that Harvey “was the most stressful and traumatic experience of my life.” *Id.* at 854:19–20. Mr. Thomas said he never had experienced “anything like that before. It was exceptional.” *Id.* at 869:21–970:21. During Harvey, defendant turned the power off at Addicks to prevent potential electrocution. *Id.* at 531:20–532:11, 626:8–627:2. Personnel stayed on site for weeks, with some sleeping on air mattresses or in their cars and one member worked 20 hours a day. *Id.* at 160:18–

necessity may be applicable to a coordinated response from a non “last-minute” threat. *Id.* Yet, whether an imminent danger and actual emergency occurred is a subjective, case-specific inquiry which the Court must undertake. *TrinCo*, 130 Fed. Cl. at 599.

22, 523:20–25, 865:9–15. Field observers lost their personal vehicles and some had to be rescued by other team members. *Id.* at 525:14–25. Afterwards, the National Oceanic and Atmospheric Administration called Harvey the largest rain event in United States history. *Id.* at 868:17–18; JX 54, at 2–6.

As for the Dams themselves, defendant ranked Addicks and Barker as two of the highest risk projects in its inventory. JX 3, at USACE019768, USACE019772–73. It further represented that Harvey was the first time impounded flood waters exceeded government land and flowed around the ends of each Dam. Trial Tr. at 254:1–3, 266:23–267:1. Recorded inflows almost doubled the previous pools of record at both Dams. *Id.* at 873:6–8. Defendant estimated that potential dam failure placed 600,000 lives at stake and around \$21 billion in projected damages. *Id.* at 331:2–333:3. Furthermore, both Dams were undergoing construction during Harvey. Corps members installed a cofferdam at both structures as it renovated the primary outlet works. *Id.* at 526:17–25, 617:9–14. As water pooled in the Reservoirs, the primary outlets became fully submerged and made strange noises at which “the Corps didn’t really know at the time whether they would be safe.” *Id.* at 562:1–7. The Corps also feared that auxillary spillways would fail if water levels exceeded 112 feet at Addicks and lead to uncontrolled releases. *Id.* at 538:13–539:2.

The Court does not intend to diminish or disrespect defendant’s efforts. Corps members exhibited a high degree of professionalism amid Harvey’s circumstances. Nonetheless, defendant failed to establish that conditions threatened the integrity of the Dams to create an actual emergency. *See id.* at 620:22–621:8. As defined in *Upstream*, “emergency” refers to a state of things *unexpectedly arising*.” *In re Upstream*, 143 Fed. Cl. at 564 (emphasis in original). Nothing surprising occurred from the Induced Surcharges. The Corps had forecasted potential flooding through its flowage maps. JX3, at USACE019785–90. They also planned and monitored conditions for days using CWMS and invoked Section 7-05(b) after conditions were met. *See generally* DX213. Unlike *Caltex*, in which defendant deliberated for days before destroying oil depots in Asia as the Japanese armed forces advanced, defendant acted in accordance with pre-set obligations it enacted years in advance. *See Caltex*, 344 U.S. at 154–55. Furthermore, defendant conceded that no imminent danger existed at the Reservoirs. Colonel Zetterstrom testified that the Corps could not wait to open the floodgates because “[o]nce dam failure is imminent, it’s almost impossible to stop that sequence and ultimate failure.” Trial Tr. at 890:9–16. Again, plaintiffs do not question defendant’s decision to open the floodgates. But invoking the Induced Surcharges *before* imminent failure prevents a finding that an imminent danger existed. *TrinCo*, 130 Fed. Cl. at 599. And as one of two prerequisites to necessity, defendant’s representation cuts against a finding that it can seek protection under the doctrine. *Id.*

The Corps further tells on itself. Following Harvey, defendant published a Report of Performance which concluded that the “embankment, outlet structures, and emergency spillways functioned as intended. . . . There were no observations of seepage, or critical distress areas located on the dams.” JX 53 at USACE016689. Overall, Addicks and Barker performed “*as expected with no significant problems during this pool of record event*.” *Id.* (emphasis added). Additionally, the “full capacity of the emergency spillway [at Addicks] was not reached with only the end scour pad going underwater . . .” *Id.* at USACE016697. Defendant further wrote that on-site conditions would not impact future performance of the Dams. *Id.* at USACE016691. Defendant’s report incorporated its final observations and “what the Corps knew and believed

during these events.” ECF No. 576, at 8.¹⁶ Senior Corps officials also testified that no structural damage or overtopping occurred as well. ECF 548, at ¶ 100.

Despite pool levels at Addicks and Barker approaching their spillway design floods, risk of failure remained minimal. Approximately 27 to over 35 inches of rain fell around the Reservoirs and in the Buffalo Bayou region over four days. ECF No. 548, at ¶ 99. Addicks recorded its highest pool level at 109.09 feet, and the most extreme forecast called for a 112-foot pool elevation. *Id.* at ¶ 85. At peak elevation, the Dam held a flood pool volume of 217,726 acre feet of water. *Id.* at ¶ 86. Still, Addicks did not meet or exceed its spillway design flood of 115 feet. Trial Tr. at 73:25–75:25. Barker reported a peak flow of 101.6 feet. ECF No. 548, at ¶ 87. At peak elevation, Barker held 170,941 acre-feet of water. *Id.* at ¶ 89. Barker also did not meet or exceed its spillway design flood of 108 feet either. JX 53, at USACE019885. Defendant calculated that the spillway design flood created a 14 percent risk that the auxillary floodways would fail at Addicks. Trial Tr. at 572:11–18. However, the risk of failure at pool elevations below 111.6 feet is zero. JX 42, at USACE066222. Even elevations slightly higher posed a risk of less than one in a million, which conforms to defendant’s policy for an acceptable amount of risk.¹⁷ ECF No. 580, at 10 (citing JX42, at , at USACE066222); *see also* Trial Tr. at 573:12–17 (defining Corps’ policy for risk as one in ten-thousand). Still, defendant made the “necessary” releases “because the Manual dictated it to be done.” Trial Tr. at 974:23–25.

At Addicks, Mr. Maglio also observed minimal shallow flows at its north end that was “barely moving” on August 29, 2017. *Id.* at 139:2–141:13–144:6, JX 109–10. Those flows “[s]pread out for a distance from the end of the dam, just due to the flat topography of the land.” Trial Tr. at 972:17–21. But aside from the north auxillary spillway at Addicks, its south spillway “and both [spillways] at Barker [] did not see any flows.” JX 53, at USACE016697; Trial Tr. at 141:13–144:6. In response, defendant cited Mr. Bardol’s report that “upstream properties would have experienced deeper, longer, and more extensive flooding if the Corps had disregarded the [Water Manual] and left the gates closed.” ECF No. 581, at 22; Trial Tr. at 1038:18–1040:2; 381:17–383:2. Under this scenario, Mr. Bardol estimated that 5,700 cfs of water would cause flooding to other downstream properties to the east and southeast of Addicks. *See* DDX 3, at 21. The Court fails to see how this argument relates to plaintiffs’ properties. Such allocation of floodwater between different upstream, downstream, and adjacent properties embodies the policy behind takings liability: to prevent some property owners from bearing public burdens alone. *See Armstrong*, 364 U.S. at 49.

Furthermore, the EAP failed to trigger an emergency. That document serves two purposes: (1) “to identify emergencies that could threaten dam failure[;]” and (2) “to identify emergencies that could arise from normal project operations such as reservoir pools” exceeding government owned land and uncontrolled spillway releases. Trial Tr. at 581:6–13; JX 3, at USACE019764. Emergency procedures become “automatically effective when actual or predicted water surface elevations within the reservoirs reach designated limits or when [defendant] declares an emergency condition.” JX 3, at USACE019765. Here, the parties already stipulated that defendant flooded

¹⁶ Colonel Zetterstrom admitted that the word “emergency” never appeared in the report. Trial Tr. at 419:10–420:12.

¹⁷ According to Mr. Bardol, each Dam has “been analyzed for much larger storms than Hurricane Harvey to be able to operate safely.” Trial Tr. at 68:14–17.

plaintiffs' properties under the Water Manual, not the EAP. ECF No. 548, at ¶ 80. And the Court remains unconvinced that a document itself can satisfy whether an actual emergency occurred. Still, the Court will address defendant's arguments.

Defendant first contended that Colonel Zetterstrom's declaration of emergency on August 22, 2017, obviated the need for a formal declaration under the EAP. *See* JX 1; Trial Tr. at 599:20–600:23. Substantively, the declaration allowed defendant to initiate emergency administrative and personnel services. For instance, defendant activated ABECT to regularly update local and county officials. ECF No. 577, at 12. The EAP also allowed defendant to deploy observation teams to monitor and report on dam integrity. *Id.* at 14. However, none of those measures addressed whether an actual emergency occurred at Addicks and Barker. Instead, they serve as ancillary measures and responses to a general emergency. While defendant was concerned about the performance of Addicks and Barker, the Corps is always assessing risk and failed to answer whether they faced an actual emergency of failure. The parties also disagreed on how to reconcile the Water Manual with the EAP. Colonel Zetterstrom believed that the Water Manual "is a part of the [EAP] and subordinate to it. It's a subset of the [EAP]." Trial Tr. at 878:12–14. According to Mr. Long, the EAP and Water Manual worked simultaneously during Harvey. *Id.* at 969:20–25. But once more, "everything that the Corps did during the reservoir releases was covered by the Water Control Manual." *Id.* at 940:15–21, 949:7–22, 948:8–949:5.

Next, the EAP's terms failed to establish that Harvey presented an actual emergency to the Dams. "The EAP consists of advance preparation, two phases of extended watches for detection, and 3 classifications of emergency levels for evaluation and emergency response actions." JX 3 at USACE019774. In particular, Extended Watch 2 becomes active when pool elevation reaches 97.5 feet at Addicks and 93.6 feet at Barker. *Id.* Emergency Levels 1 and 2 occur following an "Unusual Event or Developing Condition" or "Expected Flooding from Uncontrolled/Controlled Releases or Potential dam Failure Situation." *Id.* at USACE019827–28. Emergency Level 2 exists when "*no immediate threat of dam failure exists.*" *Id.* at USACE019827 (emphasis added). Only Emergency Level 3 contemplates "an extremely urgent situation where conditions are such that failure . . . is judged to be imminent or in progress." *Id.* at USACE019828 (emphasis added). Plaintiff argues that defendant did not exceed Extended Watch 2 during Harvey. ECF No. 580, at 13. In opposition, defendant contended that it reached Emergency Level 2. ECF No. 577, at 10–14.¹⁸ Either way, both scenarios do not pass muster. Emergency Level 2 plainly states that "there is not an *immediate threat* of dam failure." JX 3, at USACE019827–28. If defendant acted under Emergency Level 2, they primarily used the status to activate administrative services. ECF No. 577, at 12–14. By definition, defendant conceded that the Dams did not face an imminent danger. JX 3, at USACE019827. On the flip side, if defendant only reached Extended Watch 2, their actions do not support a finding that an emergency existed. In addition, the Corps did not release impounded water through the EAP's release schedules either. *Id.* at USACE 019826–26. Therefore, the EAP did not create an actual emergency or imminent danger in this scenario.

Finally, defendant has been under a mandate since 1966 to acquire all lands "below the maximum flowage line of the reservoir . . . and to permit induced surcharge operation." *See* JX 18. It made no acquisitions of downstream properties. Trial Tr. at 686:5–692:12. As of 2009,

¹⁸ In his report, Mr. Thomas wrote that conditions satisfied Extended Watch 2 but did not report that conditions surpassed any of the Emergency Levels. Trial Tr. at 412:7–17.

defendant concluded that the “available hydrologic models indicate that the limit of the [government-owned land] would be exceeded in extreme events.” PX333 at USACE464090. During Harvey, Mr. Thomas requested “federal funding to buy all of the property in the A&B reservoirs and in the surcharge corridor.” PX 131, at USACE803821. Under these circumstances, defendant stood idle for 51 years as Buffalo Bayou developed and became densely populated. But now it claims necessity when it could have resolved the problem decades ago. In this case, where defendant is culpable for creating conditions it believes constituted an emergency, “the government immunity from liability under the necessity doctrine would stretch the doctrine too far.” *In re Upstream*, 146 Fed. Cl. at 264 (alterations omitted).

Therefore, the Court concludes that the necessity defense cannot absolve defendant of liability, and the Court now finds in favor of plaintiffs.

E. Additional Question: Whether The Flooding Passes The Takings Versus Tort Test Under *Ridge Line*.

The parties also briefed whether the Induced Surcharges satisfied the tort versus taking distinction outlined in *Ridge Line, Inc. v. United States*, 346 F.3d 1346 (Fed. Cir. 2003); ECF No. 262, at 52–56; ECF No. 266, at 26–32. To establish a taking under that test, a plaintiff must show: (1) that the government intended to invade a protected property interest “or the asserted invasion is the direct, natural, or probable result of an authorized activity and not the incidental or consequential injury inflicted by the action;” and (2) the Court must consider “the nature and magnitude of the government action.” *Ridge Line*, 346 F.3d at 1355–56. A taking must also “appropriate a benefit to the government at the expense of the property owner, or at least preempt the owners right to enjoy his property for an extended period of time.” *Id.* at 1356.

Defendant argued that plaintiffs’ temporary and permanent takings claims must both pass *Ridge Line*. ECF No. 262, at 51. Plaintiffs believe that *Arkansas Game I’s* test subsumes *Ridge Line*. ECF No. 266, at 26. Recent Supreme Court language suggests this outcome.¹⁹ But in his 2019 opinion, Judge Lettow framed his conclusions around *Ridge Line’s* tort versus taking test. *See generally In re Upstream*, 146 Fed. Cl. 219. To date, the Federal Circuit has not held that *Ridge Line* cannot apply toward temporary takings. Since the Court believes plaintiffs satisfied *Ridge Line’s* test under both scenarios, it will refrain from answering that question.

According to defendant, *Ridge Line* requires a showing that the Induced Surcharges were “intended, or should be deemed intended, *because* it was the direct, natural, or probable result of an authorized activity and not incidental or consequential injury inflicted by the action.” ECF No. 62, at 52 (emphasis added). Defendant misreads the text. *Ridge Line* expressly states that a plaintiff may establish a taking under either option. *See Ridge Line*, 346 F.3d at 1355. For reasons already discussed, plaintiffs established that defendant intended to flood their property and that

¹⁹ The Supreme Court in *Cedar Point* confirmed that its prior holding in *Arkansas Game I* “reflects nothing more than an application of the traditional trespass-versus-takings distinction to the unique considerations that accompany temporary flooding.” *Cedar Point*, 594 U.S. at 160. Additionally, *Cedar Point’s* holding in finding a permanent, physical taking “does nothing to efface the distinction between trespass and takings.” *Id.* at 159. Regardless, plaintiffs satisfied *Ridge Line* under both scenarios.

their actions were entirely foreseeable. *See generally Supra* Section III.A.2.; Section III.B. *Ridge Line* also opined that a plaintiff satisfies the first element when defendant “initiated a series of events, all in their natural order, by which the landowner was deprived of the beneficial use of portions of its land.” *Ridge Line*, 346 F.3d at 1356. Flooding and related damage from Induced Surcharges seem to be the predictable consequence of opening the flood gates.

The Court also finds disingenuous defendant’s assertion that “[a]ny flooding of Plaintiffs’ downstream properties is, at most, an unintended and consequential result of the construction and operation of the Project during the storm.” ECF No. 262, at 54. According to defendant, Harvey served as the sole source of flooding and defendant’s role in causing damage to plaintiffs’ properties “was secondary to the severe rainfall.” *Id.* Not so. Corps members acted in compliance with and executed their duties under the Water Manual. *See* Pls.’ 266-2, at A1148, A1182. Based on its flowage maps and other available data, defendant knew which properties would flood. Pls.’ 266-1, at A326–31, A452–56. The Corps’ decision to flood private property through Section 7-05(b) damaged and materially impaired plaintiffs’ use and enjoyment of their properties. Thus, intentionally flooding downstream properties was “directly attributable to government action.” ECF No. 262, at 52. Defendant also proposed that the Court should measure foreseeability from “when the Corps constructed the Project beginning in the 1940s.” *Id.* at 55. Here, the government action at issue is defendant’s decision to invoke section 7-05(b) in 2017, not its decision to construct Addicks and Barker eighty years ago. Thus, plaintiffs satisfied the first part of the *Ridge Line* test.

As for the nature and magnitude of the Induced Surcharges, plaintiffs already demonstrated the severity and consequences of defendant’s decision to invoke Section 7-05(b). Instead, the Court will address some additional points. Defendant cited *Cedar Point* which affirmed that “[i]solated physical invasions, *not undertaken pursuant to a granted right of access*, are properly assessed as individual torts rather than appropriations of a property right.” *Cedar Point*, 594 U.S. at 159 (emphasis added). Defendant rebuts its own argument. Section 7-05(b) provided the Corps with a permanent granted right of access to flood plaintiffs’ properties when certain conditions are met. Lastly, defendant asserted that plaintiffs “have not alleged or proven any prior flooding of their properties attributable to the existence or operation of the [Dams].” ECF No. 262, at 57. However, courts have already concluded that one-singular flooding event could constitute a taking. *See Stockton*, 214 Ct. Cl. at 518–19; *Ablan*, 162 F.4th at 1375–76. And courts should not resort to “blanket exclusionary rules” in takings cases. *Arkansas Game I*, 568 U.S. at 37.

Therefore, the Court determines that plaintiffs satisfied the *Ridge Line* test, such that the Court **DENIES** summary judgment in favor of defendant.

F. Additional Question: Whether The Relative Benefits Doctrine Precludes Liability.

Defendant also asserted the relative benefits doctrine as a defense. ECF No. 262, at 36–47. That doctrine precludes liability “if governmental activities inflict *slight damage* upon land in one respect and actually confer greater benefits when measured in the whole.” *Sponenbarger*, 308 U.S. at 266–67 (1939) (emphasis added). Such takings, “in substance take nothing from the landowner,” *Id.* at 267, and “is closely related to, but distinct from, the issue of causation.” *Alford v. United States*, 961 F.3d 1380, 1383 (Fed. Cir. 2020).

As a threshold matter, not “all government benefits must be considered under the relative benefits doctrine.” *Id.* at 1386. The doctrine considers “only government actions directed to the particular property at issue and considers only *government activities directed to mitigating the type of problem that caused the damage.*” *Id.* (emphasis added). Thus, courts must distinguish between special and general benefits. *See City of Van Buren, Ark. v. United States*, 697 F.2d 1058, 1062 (Fed. Cir. 1983). Special benefits “are those which inure specifically to the landowner who suffered the [] taking and are associated with the ownership of the remaining land.” *Id.* In other words, special benefits arise “directly and proximately to the remaining land as a result of the public work on the part taken, due to the peculiar relation of the land in question to the public work.” *Hendler*, 175 F.3d at 1380. General benefits are “more or less common to all lands in the vicinity of the land taken.” *Id.*; *see United States v. River Rouge Improvement Co.*, 269 U.S. 411, 415–16 (1926). When the government categorically denies that a taking occurred, only special benefits should be considered under the doctrine. *Hendler*, 175 F.3d at 1380.

In application, the doctrine has been used as a “set-off” theory. *Hendler*, 175 F.3d at 1380. (“[O]nly ‘special’ benefits can be deducted from any compensation due; ‘general’ benefits cannot be deducted.”). “This distinction is made most commonly in the calculation of awards after a taking has been established.” *City of Van Buren*, 697 F.2d at 1062; *see In re Upstream Addicks and Barker (Texas) Flood Control Reservoirs*, 162 Fed. Cl. 495, 532–33 (2022); *Ideker Farms, Inc. v. United States*, 146 Fed. Cl. 413, 414–15 (2020), *aff’d*, 71 F.4th 964 (Fed. Cir. 2023). Other courts have applied the relative benefits doctrine at the liability stage. *See Sponenbarger*, 308 U.S. at 265–68; *Ark-Mo Farms, Inc. v. United States*, 530 F.2d 1384, 1386–87 (Ct. Cl. 1976).

The trial court in *Ideker Farms* concluded that the proper baseline under the doctrine was a but-for world before the 2004 changes to its Master Manual. *Ideker Farms*, 146 Fed. Cl. at 419–20.²⁰ Similar to its causation analysis, the Court determined that the changes were “not contemplated when the Corps took its prior flood risk-reducing actions.” *Id.* at 422. It also discussed *Sponenbarger* and noted that the Supreme Court considered the relative benefits of the 1928 flood control plan that allegedly caused flooding, not a previous 1883 flood control plan implemented by defendant. *Id.* at 420–21. On appeal, the Federal Circuit concluded that the relative benefits doctrine was inapplicable because it “does not take into account the benefits conferred by all government actions.” *Ideker Farms*, 71 F.4th at 985. The court found that no benefits inured to the plaintiffs when defendant prioritized natural wildlife over flood protection. *Id.* at 986. In particular, the court “conclude[d] that the benefits of the 1944 FCA should not be weighed against the detriments of the 2004 Changes.” *Id.* at 985–86; *but see Alford*, 961 F.3d at 1385–86 (determining that the plaintiff’s would have “been far worse off” and “suffered more serious damage” from flooding had the government not raised a lake’s water level to prevent a levee breach); *Ark-Mo*, 530 F.2d at 1386 (concluding that the plaintiff suffered “little injury in comparison with far greater benefits conferred” when the closure of a government dam caused flooding to plaintiff’s crops); *Laughlin v. United States*, 22 Cl. Ct. 85, 112–14, *aff’d*, 975 F.2d 869

²⁰ That Court interpreted *St. Bernard* as leaving “open the exact circumstances of this case where the flooding at issue is caused by government actions that were plainly not contemplated at the time the original river flood control management systems were designed and constructed.” *Ideker Farms*, 146 Fed. Cl. at 420.

(Fed. Cir. 1992) (finding that flood control systems greatly outweighed the detriment of flooding on plaintiff's property).

In this case, the Court will apply the same baseline as it used in its causation analysis. *See Ideker Farms*, 146 Fed. Cl. at 419–20. Otherwise, reviewing any and all benefits provided by Addicks and Barker would consider actions that were “outside the scope of the project and excluded for purposes of causation.” *Ideker Farms*, 71 F.4th at 986. It would also render *Hardwicke* meaningless because defendant “would have the right to accrue credits for generations, then withdraw its risk-reducing measures and flood private properties without any risk of liability.” ECF No. 266, at 56; *Ideker Farms*, 71 F.4th at 986. Similar to causation, the “governmental activities” in question are not the construction and general operation of Addicks and Barker. *Sponenbarger*, 308 U.S. at 266–67. Instead, defendant’s decision to invoke Section 7-05(b) underlies this case. Additionally, plaintiffs “did not benefit in any way from” Section 7-05(b). *Ideker Farms*, 71 F.4th at 986. In addition, the Court in *Sponenbarger* found no liability when defendant had not subjected the plaintiff’s property “to any additional flooding, above what would occur if the Government had not acted.” *Sponenbarger*, 308 U.S. at 266. Unlike that case, plaintiffs here have already shown that their properties received greater flooding due to the Induced Surcharges. Put differently, had defendant not acted by invoking Section 7-05(b), plaintiffs established that their properties would have experienced less flooding. And in *Sponenbarger*, the Court concluded that the doctrine intends to prevent property owners from receiving a “special bounty” when governmental activities inflicted “slight damage.” *Id.* at 266–67 (emphasis added). Plaintiffs did not receive any “bounty” from a regulation that mandated flooding that would damage their properties. Thus, the Court questions whether the relative benefits doctrine is even applicable to this matter.

If the Court considered defendant’s argument further, plaintiffs asserted that applying the relative benefits doctrine would be premature. ECF No. 266, at 51–52. As a “set-off” rule, they advocated for any relative benefits to be assessed at the damages stage. *Id.* Plaintiffs further argued that defendant must produce economic evidence that quantifies the benefits inured to their properties. ECF No. 266, at 51, 61. By contrast, defendant believes that the doctrine serves as an independent basis to defeat liability. ECF No. 262, at 36; ECF No. 277, at 20. Indeed, courts apply the doctrine in both scenarios. *Compare City of Van Buren*, 697 F.2d at 1062; *with Ark-Mo Farms*, 530 F.2d at 1386–87. Thus, the Court agrees with defendant and notes that other courts have considered non-economic evidence at the liability stage. ECF No. 277, at 25.

However, defendant still failed to satisfy its burden. For support, defendant provided data that allegedly proved without the Dams plaintiffs’ “properties would have experienced flooding during Harvey at higher depths than they did with the Project.” ECF No. 262, at 39–41. Since the Court found that it must compare flooding against a world in which the Corps never opened the gates, this information will not be considered. Defendant also summarized how Addicks and Barker reduced flooding from prior storms. ECF No. 266, at 42–46. Defendant estimated that the Dams have prevented around \$24.9 billion in damages, including over \$8 billion in damages from 2017 alone. *Id.* at 46. But those facts seem like general benefits, not specific benefits to plaintiffs’ properties. *See City of Van Buren*, 697 F.2d at 1062; *Hendler*, 175 F.3d at 1380. While the Court may infer certain special benefits to plaintiffs, the Court holds that defendant cannot rely on benefits that served all Buffalo Bayou residents. ECF No. 277, at 27. Furthermore, defendant’s

proposed benefits arose from the construction and general operation of the Dams, not its decision to invoke Section 7-05(b). Perhaps, with additional discovery and time to develop its case, defendant may better illustrate the special benefits afforded to plaintiffs' properties.

Therefore, the Court holds that the relative benefits doctrine does not relieve defendant from liability. Accordingly, the Court **DENIES** summary judgment in favor defendant.

G. Additional Question: Whether The Government's Inherent Police Powers Preclude Liability.

Defendant last asserts that its actions are protected because its conduct fell within its police powers. ECF No. 262, at 48–51. Plaintiffs conclude that the necessity doctrine subsumes any police powers defense. ECF No. 266, at 66–67. In plaintiffs' opinion, defendant's police powers do not serve as an independent defense. *Id.* Admittedly, the parties did not allocate much time to this argument during briefing. But the Court wishes to clarify this issue.

The Court in *Milton* rejected defendant's argument that plaintiffs' "property rights are held subject to the police power under federal law." *Milton*, 36 F.4th at 1162. The Federal Circuit then alluded to the necessity defense but qualified that necessity "is not relevant, however, to whether [plaintiffs'] have asserted a cognizable property interest." *Id.* Thus, the Court disagrees with plaintiffs' contention "that the Government can prevail on its police powers argument *only* by satisfying the requirements of the necessity defense." ECF No. 266, at 66 (emphasis added).

The government's police powers "are nothing more or less than the powers of the government inherent in every sovereignty to the extent of its dominions[.]" *The License Cases*, 46 (5 How.) U.S. 504, 584 (1847). Although "the precise contours of the principle are difficult to discern," defendant's powers do have limitations. *AmeriSource Corp. v. United States*, 525 F.3d 1149, 1153–54 (Fed. Cir. 2008). Courts within this circuit have recognized defendant's police powers as a defense to liability in takings cases. *See Kam-Almaz v. United States*, 682 F.3d 1364, 1370–72 (Fed. Cir. 2012); *AmeriSource*, 525 F.3d at 1153–55; *Acadia Tech., Inc. v. United States*, 458 F.3d 1327, 1329 (Fed. Cir. 2006). In *Upstream*, the Court curtailed defendant's police power with respect to government-induced flooding. *In re Upstream*, 146 Fed. Cl. at 263–64. There, defendant failed to persuade the Court that it mitigated an unavoidable harm to the public. *Id.* at 263. Additionally, the emergency that defendant allegedly manufactured by its construction, design, and operation of Addicks and Barker could not justify its police powers defense. *Id.* at 263–64.

The Court refuses to broaden defendant's police powers to government-induced flooding as well. Much of the police powers caselaw arises from confiscation of personal property during law enforcement or criminal investigations. *See Kam-Almaz*, 682 F.3d at 1265 (seizing laptop by customs agents at airport); *AmeriSource Corp.*, 525 F.3d at 1149 (confiscating drugs to be used as evidence in criminal proceedings against third party); *Acadia Tech., Inc. v. United States*, 458 F.3d at 1327 (seeking compensation for alleged taking of computer cooling fans in United States Customs Service control based on counterfeit certification marks); *Bennis v. Michigan*, 516 U.S. 442 (forfeiting car in accordance with state statute following conviction); *Akins v. United States*, 82 Fed. Cl. 619 (2008) (protesting Bureau of Alcohol, Tobacco, Firearms and Explosives ruling

preventing plaintiff from selling a machine gun to anyone but law enforcement); *Seay v. United States*, 61 Fed Cl. 32 (2004) (seeking compensation for property taken pursuant to search warrant). No criminal or law enforcement elements are present here. While the Court lacks a clean definition of defendant's police powers, it believes such power stops short of mandatory flooding, especially when it created the so-called "unavoidable harm." *In re Upstream*, 146 Fed. Cl. at 263–64.

Therefore, the Court **DENIES** summary judgment in favor of defendant as it relates to any police powers defense.

V. CONCLUSION

For the reasons stated above, the Court finds that plaintiffs established that a temporary and a permanent taking occurred. When applying the appropriate baseline and *Hardwicke* exception, plaintiffs established that their properties suffered more flooding than had defendant kept the gates closed. Defendant also could not use the necessity defense to defeat liability because the Corps invoked Section 7-05(b) before an actual emergency posed an imminent danger to the structural integrity of Addicks and Barker. Furthermore, defendant's actions did not fall under its police powers, and its relative benefits doctrine defense was premature.

This opinion combined issues raised at trial and at the summary judgment stage. Accordingly, the Court finds **JUDGMENT** in favor of plaintiffs and shall be entered upon a determination of damages. The Court also **GRANTS** summary judgment in favor of plaintiffs and **DENIES** summary judgment in favor of defendant on all motions.

IT IS SO ORDERED.

s/ *Loren A. Smith*

Loren A. Smith,
Senior Judge