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The Origins and Development of Federal Flood Control Policy

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ABSTRACT

We explore the path from ad hoc federal flood control policy in the mid-1850s to flood control becoming a clear federal responsibility in 1936. Federal flood control was done in a piecemeal way through the early-twentieth century before three "landmark laws" over a two-decade period created a clear federal flood control policy. The Flood Control Act of 1917 was the beginning of modern flood control policy, as Congress approved federal aid for levee construction across the lower Mississippi River and parts of California in response to massive flooding. The Flood Control Act of 1928 represented the evolution of federal flood control policy, as a levees-only policy was abandoned and a comprehensive flood control program — where spillways, floodways, storage basins, and reservoirs were components along with levees — was adopted following the Great Mississippi River Flood of 1927. Finally, the Flood Control Act of 1936 made clear, during a period of extensive growth in the size and perceived responsibilities of the federal government, that flood control was a proper federal responsibility in keeping with promoting the general welfare of the country as a whole — and thus established a national policy on flood control. In accompanying multivariate analyses, we find that more liberal members of Congress were increasingly inclined to support flood control legislation — irrespective of party. We also find that members representing states/districts along the Mississippi River were also more inclined (controlling for all other factors) to support early legislation, but this regional

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effect disappeared as flood control appropriations covered a wider geographic area.

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Introduction

Federal Flood Control Policy developed in fits and starts across time. Unlike rivers and harbors legislation — intended to facilitate navigation of the rivers in the United States, by removing sandbars, fallen trees, and other obstacles — which began in the 1820s and became regular appropriations thereafter, flood control was often considered a local problem. Small appropriations were made draining swamp land prior to the Civil War, but federal aid for more direct interventions — in particular, the construction and repair of levees — only began in the 1870s. Still, such aid was sporadic and piecemeal (when it came it all) for the next several decades.

The Flood Control Act of 1917 was the beginning of modern flood control policy. Torrential rains and subsequent destructive flooding affected a large portion of the country — principally the lower Mississippi River Valley — and a concerted effort was made in Congress (during a time when the federal government and its perceived responsibilities were beginning to expand) to produce federal aid for levee construction across an entire region. The Flood Control Act of 1928 was the result of the Great Mississippi River Flood of 1927, and it represented the evolution of federal flood control policy, as a levees-only policy was abandoned and a comprehensive flood control program — where spillways, floodways, storage basins, and reservoirs were components along with levees — was adopted. Finally, the Flood Control Act of 1936 was in many ways the culmination of efforts begun decades before by flood-control advocates who sought federal intervention in more than a piecemeal (or regional) fashion. It made clear — during a period of extensive growth in the size and perceived responsibilities of the federal government — that flood control was a proper federal responsibility in keeping with promoting the general welfare of the country as a whole — and thus established a national policy on flood control.

Stathis (2014) characterizes the Flood Control Acts of 1917, 1928, and 1936 as "landmark legislation." In this paper, we provide an analytical policy history to describe how and why these landmark acts were achieved — and explain the form that they took. After our extensive historical coverage, we pursue some basic multivariate analyses to discover whether there were systematic associations between individual votes in support/opposition of flood-control legislation in Congress and explanatory factors (like party, member ideology, region, etc.) on the key roll-call votes in question.

Background

The Federal government first provided aid for flood control in the mid-nineteenth century. This aid came in the form of three acts in 1849, 1850, and 1860 that provided to 15 states "the swamp and overflowed lands within their borders unfit for cultivation and provided that the proceeds from the sale of the land must be spent for drainage and for flood protection" (Frank, 1930).[1] These acts — known as the Swamp Land Acts of 1849, 1850, and 1860 — were the culmination of efforts that began in 1845, when Senator John C. Calhoun (D-SC) argued that flood protection was a national problem and suggested donating certain public lands to the states as a means of creating a system of flood protection. The proceeds from the sale of these lands (to private investors) could then be used to construct levees and improve drainage (O'Neill, 2006). Based on these three acts, nearly 65 million acres were sold, with most of acreage concentrated in Florida (20 million acres) — mostly due to the Everglades — Louisiana (over 9 million acres), and Arkansas (over 7 million acres).

While Congress was adopting the first two Swamp Land Acts, they also appropriated money for surveys of the lower Mississippi River by the Army Corps of Engineers. These surveys consistently recommended federal money be spent on protective projects to prevent future floods (Elliott, 1932). These various efforts — especially the swampland grants — also spurred local investment in flood control, with several states (Arkansas, Mississippi, Missouri, Kentucky, Tennessee, and Louisiana) passing district levee laws and establishing levee boards (Frank, 1930; O'Neill, 2006). And by the late-1850s, significant gains were made, as 2,000 miles of levees — of sizable length and width — had been built along the banks of the lower Mississippi River, at a cost of $40 million (Frank, 1930).

Yet it was all for naught, as torrential rains in 1858 and 1859 produced the worst flooding (to that point) in the history of the Mississippi River Valley. The faith in the strength of new levees proved to be misplaced. As Frank (1930, p. 30) notes: "great inundation tore through the levees by numerous crevices and devastated most of the delta area." Following the floods, local residents sought to rebuild and looked to the federal government for assistance. But any aid they might have received was lost with the dawning of the American Civil War. Structurally weak levees went unrepaired as the war waged, and some levees were destroyed by the Union army.[2] Reconstruction also made levee repair and construction problematic, as development in the South largely

[1]The 1849 Act applied to the state of Louisiana only; the 1850 Act expanded coverage to Alabama, Arkansas, California, Florida, Illinois, Indiana, Iowa, Michigan, Mississippi, Missouri, Ohio, and Wisconsin; and the 1860 Act added Minnesota and Oregon.

[2]For example, General Ulysses S. Grant destroyed the Yazoo and Huspuckena levees in order to bypass the Confederate artillery at Vicksburg (O'Neill, 2006).

ground to a halt. While President Andrew Johnson professed support for federal repairs to levees — and several bills were introduced in Congress to provide such aid — nothing was accomplished, as Johnson quickly fell out of favor with Radical Republicans. And no help was coming from local financing in the South. As O'Neill (2006, p. 60) argues: "most [levee] districts were bankrupted, reorganized, and taken over by Reconstruction state governments, and they did little levee work for decades after the war."

While levee progress stagnated during the Civil War and Reconstruction years, Mother Nature lashed out again. Major rains led to serious floods in 1862, 1865, 1867, 1868, 1871, and 1874. (Frank, 1930, p. 30) documents the results:

> Each flood found the levees in worse condition than the previous one; and each flood, therefore, wrought greater havoc to protective works than the previous one had wrought. Crevasse after crevasse appeared and mile after mile of levee fell into the river with the caving banks. By 1878 hundreds of miles of the main line had disappeared or had been abandoned.

At this point, federal leaders began to act. In response to the 1874 flood, Congress appropriated $90,00 for relief of the flood victims and created a commission of engineers to devise a permanent plan for reclamation of the flood-prone lands surrounding the Mississippi River. President Ulysses S. Grant selected General Gouverneur Warren to chair the commission. And in 1875 the Warren Commission issued its report, with a clear statement that the federal government should assume responsibility for the Mississippi River flooding issues. More specifically, the report argued that uncoordinated local efforts had led to uneven levee construction, and that the federal government instead should create (and fund) a general levee system organized among regional districts. Yet the Warren Commission's call to action fell on deaf ears; while amendments to implement some of the commission's recommendations — with President Grant's support — were introduced during Senate proceedings on a rivers and harbors bill in 1875, they were defeated narrowly.

While Congress seemed ready to spend money on improving river navigation — via the rivers and harbors legislation of 1875 and 1878 — there was still resistance to appropriate for flood control. Yet army engineers continued to make the case to Congress that levees were important not only for flood control but also for the improvement of navigation. The engineers' continued entreaties finally paid off in 1879, with the creation of the Mississippi River Commission. Made up of an advisory group of civilian and military engineers connected to the Army Corps of Engineers, the Commission was tasked with designing plans for the development of the lower Mississippi River. While most believed development meant better and safer

navigation, others saw the construction of levees as equally important. As Camillo and Pearcy (2004, p. ix) state, regarding the Commission: "Upon their shoulders rested the task of remaking the Mississippi River into a safe and reliable commercial artery while protecting adjacent lands from overflow."

Thus, beginning in the 1880s, rivers and harbors bills in Congress that focused on navigation improvements also made concessions for levee construction and repair. Sometimes these concessions would be explicit; other times, committee members would informally direct army engineers to allocate some of their attention and resources on levees (O'Neill, 2006). Under the auspices of the Mississippi River Commission, engineers first began to repair levees (early-1880s), then to strengthen levees to prevent further breaks (middle-1880s through middle-1890s), and then finally to aid in the construction of new levees (middle-1890s onward). In this evolution of approach to levees, the Mississippi River Commission worked hand-in-hand with local levee boards and districts (Frank, 1930). In sum, as reported in the *Congressional Record*, Congress spent $30 million between 1882 and 1916 on Mississippi River levees, while local levee districts spent $90 million over the same period.[3] And this translated into 250 million cubic yards of earth in 1916, as compared to 33 million cubic yards of earth in 1882 (Arnold, 1988).

While these efforts seemed impressive, historically heavy rains and subsequent flooding on the Mississippi River in 1912 and 1913 revealed that the levees were not yet up to the task. The flooding created extensive property damage — estimated around $61 million — and left more than a quarter million people homeless.[4] And while local citizens had proved resilient in the past, levee districts claimed that they were tapped out — and had reached their limit in being able to tax and borrow for levee support. The result was clear, per Arnold (1988, p. 9): "Either Congress would have to bear a much larger share of the cost of levee building or the system would have to be abandoned. Millions of acres of rich farmland would revert to swamp, and the millions of tax dollars already spent on the levees would have been wasted."

Congress was now on the spot. While lawmakers had slowly moved toward a federal flood control program over the course of several decades, much of the funds came in the form of levee aid that was purely supplemental to navigation improvement. Now, in the mid-1910s, extreme weather had forced Congress to decide whether to pursue flood control as a standalone program. One critical factor made change more likely — in addition to the extensive damage from the Mississippi River flooding, the 1913 rains had also created massive flooding in Ohio Valley. The Ohio floods had taken the lives of more than 450

[3] *Congressional Record*, 64th Congress, 1st session (May 10, 1916), p. 7764.
[4] *Congressional Record*, 64th Congress, 1st session (May 10, 1916), p. 7768.

people and produced damages of $147 million — more than twice as much as much as along the Mississippi River. The Ohio floods of 1913 — along with the Pittsburgh flood of 1907, which caused $6.5 million in damages — made flood control appear to be more than just a regional problem, localized along the lower Mississippi River. It was increasingly a national problem (Arnold, 1988).

The Newlands Inland Waterways Commission

The first serious attempt at creating a federal flood control program was led by Senator Francis Newlands (R-NV). Newlands was responsible for the Reclamation Act of 1902, and he saw flood control as one element in a multipurpose inland waterways program that would also include navigation, water power, and irrigation (Hays, 1959). After the Pittsburgh flood of 1907, Newlands worked with President Theodore Roosevelt to create the Inland Waterways Commission, which was to study the issue of water resources and recommend policy solutions. After completing its work, the Commission, led by Newlands, recommended a coordinated program of multipurpose river development led by a permanent cabinet-level commission appointed by the president. This new independent commission would replace the Army Corps of Engineers as the key decision-maker on all water-related development matters.

In December 1907, Newlands introduced a bill consistent with the Commission's recommendation.[5] But he ran into a wall. As Arnold (1988, p. 13) states: "Congress . . . was unwilling to transfer the gigantic rivers and harbors navigation improvement program into the hands of an independent commission — especially one that would no longer rely on the Corps of Engineers for its decisions." While the Newlands bill made it through the House — after being put through the wringer by the Chair of the Rivers and Harbors Committee, Theodore Burton (R-OH) — it died in the Senate. Newlands kept pushing his independent commission bill for the next decade but was stymied by various constituencies and the concerted efforts of the Army Corps of Engineers. Finally, an independent commission (limited to powers of investigation) was added as an amendment to the Rivers and Harbors Act of 1917. But it never went into operation. The Chief of the Corps, Major General William M. Black, took advantage of the United States' involvement in World War I to make the following recommendation to Secretary of War Newton Baker: "It is my opinion that the situation is not such to warrant the organization of the commission, and the active prosecution of duties entrusted to it at this time. . . The consideration of this whole subject should be postponed" (quoted

[5] *Congressional Record*, 60th Congress, 1st session (December 1907), p. 389

in Hays, 1959, p. 208). President Woodrow Wilson followed Black's advice and did not appoint the commission.

The Flood Control Act of 1917

While the Newlands commission idea was successfully blocked by Congress, the momentum for federal flood control was real. The destruction resulting from the Ohio and Mississippi floods, along with flood damage on a number of other rivers from California to New England, was impossible to ignore — and made a new federal policy almost inevitable. The first step was the creation of a House Committee on Flood Control, which was pushed by House members from both the lower Mississippi River states and the Ohio Valley states and backed by Speaker Champ Clark (D-MO), whose district bordered the Mississippi River and was subject to overflow.[6] Members of the Rivers and Harbors Committee expressed skepticism of the new Flood Control Committee, but they were assured it posed no threat to traditional river and harbors projects. The context also mattered, as Arnold (1988, p. 13) notes: "The debate's timing . . . was fortuitous for flood control proponents; the Mississippi River and several others were again over their banks." Thus, as another devastating flood hit the lower Mississippi Valley,[7] any additional concerns with the creation of the new Flood Committee melted away. On February 3, 1916, the resolution to create the committee was adopted without a recorded roll-call vote.

On February 9, 1916, the list of members of the House Committee on Flood Control was approved by unanimous consent.[8] Benjamin G. Humphreys (D-MS) was selected as chair, and the committee was dominated by members from states with serious flooding issues — with the states from the lower Mississippi Valley particularly well represented. (See Table 1 for the full committee list.)

Humphreys was a logical choice to chair the committee. Along with Senator Joseph Ransdell (D-LA), Humphreys had pursued joint legislation beginning in 1913 to finance the completion of the levee system along the lower Mississippi River. The Ransdell–Humphreys flood control bill was ambitious, as it sought an appropriation of more than $60 million. After introduction in both chambers, the bill was sent to the House Rivers and Harbors Committee and the Senate Committee on Commerce (Pearcy, 2000a). In the House, the Ransdell–Humphreys bill ran afoul of the annual rivers and harbors bill and

[6]See *Congressional Record*, 64th Congress, 1st session (February 3, 1916), pp. 2068–90.

[7]As Pearcy (2000a, p. 135) notes: "The 1916 flood, though less destructive than the previous two, produced record flood levels between Arkansas City and Vicksburg, Mississippi, cresting at 50.7 feet on the Greenville gage."

[8]*Congressional Record*, 64th Congress, 1st session (February 9, 1916), p. 2338.

Table 1: Members of the Committee on Flood Control, 64th House.

Name	State	Party	Rank
Humphreys, Benjamin G.	Mississippi	Dem	Chair
Garrett, Finis J.	Tennessee	Dem	2
Foster, Martin D.	Illinois	Dem	3
Cline, Cyrus	Indiana	Dem	4
Russell, Joseph J.	Missouri	Dem	5
Crosser, Robert	Ohio	Dem	6
Vinson, Carl	Georgia	Dem	7
McLemore, A. Jefferson	Texas	Dem	8
Wilson, Riley J.	Louisiana	Dem	9
Rodenberg, William A.	Illinois	Rep	1
Curry, Charles F.	California	Rep	2
Kearns, Charles C.	Ohio	Rep	3
Husted, James W.	New York	Rep	4
Wood, William R.	Indiana	Rep	5
Martin, Whitmell P.	Louisiana	Prog	1

Source: Canon *et al.* (2002).

Newlands' Waterways commission bill, both of which took precedence over the floods bill. Over the next several years, the Ransdell–Humphreys bill languished in the House Rivers and Harbors Committee while a compromise rivers and harbors and waterways bill was held up and eventually scaled down considerably by a dilatory Republican minority in the Senate (Camillo and Pearcy, 2004).

Beginning in 1916, however, with a separate Flood Control Committee in place, the Ransdell–Humphreys bill stood a much better chance of success. It was no longer buried in a committee (Rivers and Harbors) with members who looked on flood control with suspicion, as a competitor to their chief concern (which was navigation).[9] And, if it was given consideration at all, it was no longer a minor appendage to a larger omnibus bill (whether rivers and harbors or waterways). A standalone Flood Control Committee meant a membership of flood-control advocates and a direct route to the House floor for legislation.

The Flood Control Committee held hearings in March 1916, and 38 witnesses testified on the Mississippi River flood problem, including Senator Ransdell, former-Senator LeRoy Percy (D-MS), and Colonel Townsend, the president of the Mississippi River Commission. Nearly all the testimony

[9] As Pearcy (2000a, p. 145) notes: "The failure of the Rivers and Harbors Committee to give adequate consideration to the Ransdell-Humphreys Bill . . . figured in the Speaker's decision to create a new committee."

backed the levees-only plan preferred by Humphreys and Ransdell, rather than the broader plan of flood control that included levees, reservoirs, reforestation, and outlets that were part of the Newlands waterways program. Overall, Percy and Townsend testified that the cost of the levee system's completion would be in the range of $50 million (Pearcy, 2000a). The committee also considered testimony regarding the floods on the Sacramento River, with tributaries near Lake Tahoe, as an olive branch to Newlands and his supporters.

On April 29, 1916, the Flood Control Committee reported the Humphreys–Ransdell bill (H.R. 14777) without amendment to the House floor.[10] The bill proposed a $45 million appropriation over 5 years for levee construction on the Mississippi River and a $5 million appropriation for similar work on the Sacramento River. The bill also included a cost-sharing plan between the federal government and local levee boards — a new principle — whereby the levee board would contribute one dollar for every three the federal government provided, with local boards furnishing rights of way and paying maintenance costs.[11] This provision was amended on the floor — on a 66-65 teller vote — to raise the local contribution level to one dollar for every two that the federal government provided.[12] On May 17, 1916, the Humphreys–Ransdell bill, as amended, then passed 180-53 on a division vote. The yeas and nays were asked for, but only 32 members supported the request — so it was refused.[13]

The road through the House for the Humphreys–Ransdell bill was relatively straightforward, as the Flood Control Committee made it easy to get the bill to the floor. And once there, per Camillo and Pearcy (2004, p. 113), "few . . . could justify their opposition in an election year, as all three major political parties were committed to the premise that the lower Mississippi was a national project worthy of federal aid." The road would be more treacherous in the Senate, however, as Ransdell anticipated significant opposition from Newlands. And with only one-third of senators up for reelection, election–year politics would not weigh as heavily as in the House.

And Newlands showed his hand quickly. When the Humphreys–Ransdell bill was introduced 2 weeks later, on May 31, 1916, Newlands moved to refer it to the Committee on Interstate Commerce, which he chaired, rather than the Committee on Commerce.[14] Ransdell recognized this maneuver for what it was and stated plainly that Newlands' intent was to kill the bill (Pearcy, 2000a).

[10] *Congressional Record*, 64th Congress, 1st session (April 29, 1916), p. 7108.

[11] That the levee boards were responsible for furnishing rights of way and paying maintenance charges made the ultimate federal two-to-one contribution "almost a dollar-to-dollar proposition" (Frank, 1930, p. 152).

[12] *Congressional Record*, 64th Congress, 1st session (May 10, 1916), p. 7771.

[13] *Congressional Record*, 64th Congress, 1st session (May 17, 1916), p. 8220.

[14] *Congressional Record*, 64th Congress, 1st session (May 31, 1916), p. 8933.

Table 2: Roll-call votes on the Humphreys–Ransdell Bill (H.R. 14777), 64th Senate.

	Date		Democrat	Republican	Total	Party vote?	Majority party outcome
To Refer HR14777 to Commerce Committee	5-31-1916	Yea	25	16	41	No	Success
		Nay	10	6	16		
Newlands (D-NV) Amendment	2-26-1917	Yea	13	16	29	Yes	Block
		Nay	24	8	32		
Norris (R-NE) Amendment	2-26-1917	Yea	10	11	21	Yes	Block
		Nay	25	5	30		
Kenyon (R-IA) Amendment	2-26-1917	Yea	7	13	20	Yes	Block
		Nay	28	4	32		
To Pass HR14777	2-26-1917	Yea	30	9	39	Yes	Success
		Nay	6	10	16		

After a short debate, the Senate voted on the motion to refer the bill to the Committee on Commerce, and it was adopted, 41-16, with majorities of both parties voting yea. (See Table 2 for a breakdown of all Senate votes on the Humphreys–Ransdell bill.[15]) This was an initial test of strength which Ransdell won, as the Committee on Commerce "was known to have a safe majority favoring the [Humphreys-Ransdell] bill and to be under friendly leadership" (Pearcy, 2000a, p. 148).

But inter-party politics stalled further progress, as Senate Republican once again stood in the way of the Democrats' rivers and harbors legislation. And then Senator James Paul Clarke (D-AR), chairman of the Committee on Commerce, decided to delay consideration of the Humphreys–Ransdell bill until the rivers and harbors bill could be dealt with. The Republican filibuster prevented further action into July, when the rivers and harbors bill finally passed. But it was too late in the session to consider flood control, so Ransdell

[15]The table includes columns for whether a roll call was a party vote (defined as a majority of Republicans opposing a majority of Democrats) and what the majority party outcome on the roll call was (a success, block, roll, or disappointment). A block is when a majority of the majority opposes a proposal that is subsequently defeated. A success is when a majority of the majority supports a proposal that subsequently passes. A roll is when a majority of the majority party opposes a proposal that subsequently passes. A disappointment is when a majority of the majority party supports a proposal that is subsequently defeated. See Jenkins and Monroe (2016) for a more detailed description of the various roll-call outcomes.

and his allies had to wait until the second (final) session of the 64th Congress, which began in early December.

More trouble followed. First, Senator Clarke died unexpectedly from a massive stroke on October 1, 1916, robbing Ransdell and his flood-control allies of one of their most powerful supporters. Second, in November, while President Wilson won reelection, the Democrats lost a number of seats in both chambers of Congress — to the point of threatening their majorities in the next (65th) Congress — which put more pressure on Ransdell to get something done in the second (lame-duck) session of the 64th Congress. Third, Newlands reemerged as a thorn in Ransdell's side, as he demanded Senate hearings on the Ransdell–Humphreys bill — which were held just before Christmas — before any additional legislating could be done. Fourth, and finally, Germany announced a return to unrestricted submarine warfare in January 1917 which forced President Wilson to push for an emergency revenue measure that many in the Senate considered controversial.

In Wilson's push for an emergency revenue bill, Ransdell saw an opportunity. And with the end of the lame-duck session rapidly approaching, he hatched a plan. As Camillo and Pearcy (2004, p. 116) recount:

> Working behind the scenes, he drafted a proviso that would guarantee action on the [Ransdell-Humphreys bill] and took it to the leadership of both parties. Senate Republicans were anxious to displace the revenue bill to an extra session and proved amenable to the idea. The Democratic leadership, eager to secure consideration of the administration's emergency revenue bill, could not risk a break with their Southern element at such a critical juncture, and Ransdell forced the issue by threatening to launch a filibuster of his own. Although his actions invited the condemnation of the party leadership, they eventually acceded to his demands. Approaching midnight on Saturday, February 24, the Senate approved a unanimous-consent agreement that set aside five hours on the following Monday afternoon for the consideration of the Ransdell-Humphreys bill, with the revenue bill to follow two days later.

Ransdell's last worry was that Newlands (or any opponent of the Ransdell–Humphreys bill) would gain the floor and run out the clock. And Newlands did gain the floor on February 26, 1917, but claimed "no disposition to obstruct this bill."[16] Instead, he returned to his pet issue — the Inland Waterways Commission — and sought to add it as an amendment to the Ransdell-Humphreys bill. After additional discussion, the Newlands amendment was considered, and it was rejected, 29-32, with 13 Democrats voting with a majority of Republicans in a losing effort. George Norris (R-NE) then offered

[16] *Congressional Record*, 64th Congress, 2nd session (February 26, 1917), p. 4291.

an amendment to add an appropriation to construct dams upriver of the flooding areas of the lower Mississippi in order to capture excess water. The Norris amendment was rejected, 21-30, with 10 Democrats voting with a majority of Republicans in a losing effort.[17] One final amendment was offered, by William Kenyon (R-IA), to change the ratio of federal-local contributions for flood control from two-to-one to one-to-one. The Kenyon amendment was also rejected, 20-32, with seven Democrats voting with a majority of Republicans in a losing effort.[18] Finally, the Ransdell–Humphreys bill was considered, and it passed, 39-16, with only six Democrats defecting.[19]

There was yet a sliver of doubt that the bill might fail, as President Wilson hinted that he was unhappy that the Newlands amendment was not attached. But these fears of a presidential veto proved to be unwarranted. On March 1, 1917, Wilson met with Humphreys, Ransdell, and several others in his private office at the White House and signed the bill.[20] He then remarked: "This is a very necessary piece of legislation" (quoted in Pearcy, 2000a, p. 88).

Frank (1930, p. 151) articulates why many scholars — like Stathis (2014) — consider the Flood Control Act of 1917 to be "landmark" piece of legislation: "The act of 1917, for the first time provided money for flood control . . . and introduced a new principle of sharing Federal and local contributions." The execution of the act, though, was a bit bumpy. As noted, the 1917 act authorized $45 million over 5 years to complete the Mississippi River levee system, but (because of the war) little was accomplished before 1919. Given exigent circumstances, Congress extended the period for spending the authorized sums to 7 years. Yet, due to inflated wartime prices, the volume of work fell far short of expectations. So, to complete the project, Congress passed a second flood-control bill — the Flood Control Act of 1923 — to provide an additional $60 million for levee construction over 6 years.[21] With these additional funds, the Mississippi River levee system was completed to standard in 1926.

The Flood Control Act of 1928

Public confidence was high after the completion of the Mississippi River levee system in 1926. There was widespread confidence — among both delta landowners and Mississippi River Commission officials — that adequate flood protection had been achieved.[22]

[17] *Congressional Record*, 64th Congress, 2nd session (February 26, 1917), p. 4301.
[18] *Congressional Record*, 64th Congress, 2nd session (February 26, 1917), p. 4304.
[19] *Congressional Record*, 64th Congress, 2nd session (February 26, 1917), p. 4305.
[20] 39 *Stat.* 948.
[21] Enacted March 4, 1923: 42 *Stat.* 1505.
[22] For example, along the Yahoo basin, levees went from 8 feet high and about 31,500 cubic yards per mile in 1882 to 22 feet high and 421,000 cubic yards per mile in 1926 (Camillo and Pearcy, 2004).

But this confidence was soon squelched. A historic rain hit the area in the Fall of 1926 and continued through early Spring 1927. As Camillo and Pearcy (2004, p. 138) document: "By late April, nearly 23,000 square miles of the Mississippi River Delta were under water. . . . [and] up to 500 people had lost their lives with 600,000 more seeking shelter in refugee camps." At its height, the 1927 Mississippi River flood covered 26,000 square miles in seven states, and because of the collapse of newly constructed higher levees in some areas the rush of floodwater meant that more than 330,000 people had to be rescued from their positions in trees, rooftops, and levee tops (Barry, 1997). Herbert Hoover, the Secretary of Commerce, called it the "greatest disaster of peace times in our history" (quoted in Frank, 1930, p. 192).

The Mississippi River Flood of 1927 was an economic catastrophe, not just for the region but for the broader United States. As Arnold (1988, p. 18) explains:

> Total direct property losses were estimated at $236 million. Hoover thought that indirect losses amounted to approximately $200 million. The economic effects were devastating for the lower Mississippi, but were also felt from Boston and New York to California. For many weeks no railroad trains crossed the Mississippi south of St. Louis, and more than 3,000 miles of track were under water.

The extent of devastation finally forced the abandonment of "levees-only" flood-control policy that had been the status quo, while also building a range of support for a comprehensive flood-control project (Randolph, 2018). But it would take a while to get there. The Mississippi River Commission (MRC) was initially tasked by President Calvin Coolidge with making a policy recommendation, and they held fast to levee construction (larger and larger, with "plugs" in various places) as their preferred plan. And their initial cost estimate was $872 million. The Army Corps of Engineers was also active in the policy-based politicking, as Major General Edgar Jadwin, the Chief of Engineers, worked to maintain Corps influence with President Coolidge by whittling down the costs and scope of the MRC plan. The Jadwin plan was considerably more affordable at $296 million (Camillo and Pearcy, 2004).

President Coolidge, eager to keep costs down, threw his support behind the Jadwin plan, perhaps in large part because it included a provision he felt deeply about — that localities must share in the cost of the rebuild. Local officials, like Arkansas Governor John Marteneau, complained they had no resources to contribute given the devastation they currently faced.[23] And

[23]In keeping with this point, Arnold (1988, p. 20) notes: "It was clear that local levee boards had exhausted their financial resources. Many of them had issued bonds far beyond the total assessed valuation of their districts, and financial experts said any further issues would go unsold."

Rep. Frank Reid (R-IL), Chairman of the House Flood Control Committee, and his allies agreed with the locals. This became even more true after several months of congressional hearings, where Jadwin and other administration officials knocked heads with both Republicans and Democrats on the committee (Pearcy, 2000b).

On February 16, 1928, the House Flood Control Committee introduced their own plan. Known as the Reid bill, it differed considerably from the Jadwin plan and resembled somewhat the MRC proposal. It called for the construction of levees, but just as one part of a more comprehensive flood-control program with controlled and regulated spillways, floodways, storage basins, and reservoirs. It required no local contributions and came with a price tag of $473 million. Coolidge made his opposition to the plan known — especially the cost — and threatened a veto if the House proceeded. He also believed he could count on Rep. Bertrand Snell (R-NY), the Chair of the House Rules Committee, to stop the bill's progress if necessary (Camillo and Pearcy, 2004).

In the Senate, the Chair of the Committee on Commerce, Wesley L. Jones (R-WA), was a close supporter of Coolidge and seemed more receptive to the Jadwin plan and the broader point of requiring local flood-control contributions. But Senate hearings and entreaties from his fellow senators led Jones to moderate his position on local contributions. President Coolidge, too, sought to prevent a showdown with his co-partisans and backed away from his insistence on significant local contributions.

On March 28, 1928, Jones introduced the committee bill (S. 3740).[24] Known as the Jones bill, it hewed closely to the structural aspects of the Jadwin plan but established a five-man engineering board (composed of the Secretary of War, the Chief of Engineers, the president of the Mississippi River commission, and two civil engineers) and provided it with oversight authority. The waterways components of the bill were extensive (including spillways, floodways, and diversion channels, along with a survey that might lead to reservoirs) and no local contributions were required (except to maintain all flood-control works after their completion). The cost of the program was estimated at $325 million.

After Jones's short presentation of his bill, Senate Minority Leader Joseph Robinson (D-AR) was recognized and, rather than make a speech, called for a vote after a short debate (Pearcy, 2000b). Ninety minutes later, the Jones bill (lightly amended) passed unanimously, 70-0.[25] The bill's quick success in the Senate shifted the politics in the House, as many Democrats from the lower Mississippi Valley switched their support from the Reid bill to the Jones bill. For example, Riley Wilson (D-LA), who would later chair the Flood

[24] *Congressional Record*, 70th Congress, 1st session (March 28, 1928), pp. 5480, 5482.
[25] *Congressional Record*, 70th Congress, 1st session (March 28, 1928), p. 5491.

Control Committee, argued that the Jones bill encapsulated what he and his co-partisans wanted in flood-control legislation and backing it now would bring the process to a close sooner (and, in doing so, lessen the risk of further antagonizing President Coolidge). Reid saw the writing on the wall and began working with the Jones bill in committee — and reported out a very slightly amended bill shortly thereafter. S. 3740 was now referred to as the Jones–Reid bill.

President Coolidge, ever concerned about cost, criticized the pork-barrel elements in the bill and instructed Rep. Martin Madden (R-IL), Chairman of the Appropriations Committee, to pressure Reid into bringing the bill more in line with the White House. On April 17, 1928, the House took up the Jones–Reid bill.[26] Over the course of the debate, Reid encountered opposition from Reps. Madden, James Frear (R-WI), and John Q. Tilson (R-CT) and agreed to amendments that reduced the size of the proposed engineering board from five to three (with the civil engineers dropped) and allowed the land within the proposed floodways to remain in private hands. On April 24, the amended Jones–Reid bill was considered. Frear sought to recommit the bill to committee — to move it closer to President Coolidge's position on the acquisition of property — but his motion failed, 139-206.[27] That said, a large majority of Republicans supported the Frear motion — and, thus, implicitly backed President Coolidge's position — and it failed only because a small minority of Republicans joined with nearly all Democrats in voting nay. The amended Jones–Reid bill then passed, 254-91, with nearly all Democrats in favor and Republicans split evenly.[28] (See Table 3 for a breakdown on all Jones–Reid bill votes.)

Table 3: Roll-call votes on the Jones–Reid Bill (S. 3740), 70th Congress.

	Date		Democrat	Republican	Total	Party vote?	Majority party outcome
Senate: To Pass S. 3740	3-28-1928	Yea	35	34	70	No	Success
		Nay	0	0	0		
House: To Recommit with Instructions	4-24-1928	Yea	3	134	139	Yes	Disappointment
		Nay	168	37	206		
House: To Pass S. 3740	4-24-1928	Yea	167	86	254	No	—
		Nay	3	86	91		

Note: Third party votes were as follows. Farmer-Labor: 1-0, 1-1, and 1-1 on the three votes, respectively. Socialist: 1-0 and 0-1 on the last two votes, respectively.

[26] *Congressional Record*, 70th Congress, 1st session (April 17, 1928), pp. 6642.
[27] *Congressional Record*, 70th Congress, 1st session (April 24, 1928), pp. 7123-24.
[28] *Congressional Record*, 70th Congress, 1st session (April 24, 1928), pp. 7124-25.

The hope was that Senate would concur in the House amendment on the Jones–Reid. President Coolidge, though, was not ready to give up. Buoyed by the show of Republican support he received in the House, Coolidge met with Senator Jones on April 26 and expressed his disappointment with the bill. Bowing to presidential pressure, Jones asked the Senate to disagree and appoint a conference committee. Late the following week, the conferees met and agreed to produce a conference bill with several Coolidge amendments — requiring special approval for projects favored by the special engineering board and removing all obstacles to the implementation of the Jadwin-preferred "fuse-plug" levees. Later, Coolidge demanded more concessions, and on May 7 the conference managers met with him and Jadwin at the White House. They acquiesced to more Coolidge amendments, including a further weakening of the special engineering board (by making it operative at the early planning stages only) and limiting federal liability in the proposed floodways that were not currently overflowed or damaged. After these concessions, Coolidge was content (believing he had extracted all that he could) and the stage was set for completion (Camillo and Pearcy, 2004).

On May 8 and 9, the House and Senate, respectively, approved the conference report,[29] and less than a week later, on May 15, 1928, President Coolidge affixed his signature. The Jones–Reid bill was now law — the Flood Control Act of 1928.[30]

The 1928 Flood Control Act authorized $325 million — the largest public works project appropriation ever authorized by the federal government — with subsequent legislation pushing total expenditures considerably higher.[31] It also represented the first time that the federal government assumed primary responsibility for the flood-control problems of the lower Mississippi Valley and committed itself to financing necessary improvements. Finally, it also showcased the evolution of federal flood-control policy, as a levees-only policy (the status quo to that point) was abandoned and a comprehensive flood control program — where spillways, floodways, storage basins, and reservoirs were components along with levees — was adopted.

Still, the focus of the 1928 Flood Control Act was on the lower Mississippi River, and in that way it was not so different than the 1917 Flood Control Act. That is, while federal flood policy had evolved, the scope of coverage had not. It was still regional rather than national. Yet there was an opportunity to move in a broader direction, as Rep. Reid at one point wanted to create a national flood control program. For at the same time the Mississippi Valley was experiencing cataclysmic flooding, New England was also being battered

[29] *Congressional Record*, 70th Congress, 1st session (May 8, 1928), p. 8123; (May 9, 1928), p. 8193.

[30] 45 *Stat.* 534.

[31] The prior largest public works project to that point was the Panama Canal, in which construction costs were $310 million.

by serious downpours, leading to $40 million in damages and 55 deaths (Hoyt and Langbein, 1955; Leuchtenburg, 1953). But a national bill never emerged from the Flood Control Committee. The reasons are unclear, but Arnold (1988, p. 20) offers some speculation:

> Possibly the gigantic costs of the Mississippi flood control program caused Reid and others to shrink from assuming added burdens. Another possibility is that the complex debate that shortly erupted over engineering, financial, and political questions in regard to Mississippi River flood control may have convinced the Mississippi Valley people who dominated the Flood Control Committee that enlarging the bill to address a nationwide program would be futile and only endanger immediate action on the Mississippi.

These are largely supply-side arguments, and while reasonable, seem less determinative than a demand-side argument that Arnold also provides: "the congressional representatives from New England who appeared before the committee were staunch states' rights conservatives and, unlike their colleagues from the South, could not bring themselves to ask for federal flood control aid." This antipathy to federal aid, even in relief of a natural disaster, would dissipate as the nation moved into the 1930s — and the Great Depression and the New Deal response.

The Flood Control Act of 1936

The 1930s saw the Federal government's relationship with the citizens of the United States change dramatically. The stock market crash of 1929 and the nation's subsequent slippage into the Great Depression led to the presidential election of Franklin Delano Roosevelt (D-NY) in 1932. Large Democratic majorities in both the House and Senate were also swept in on FDR's coattails. While ambiguous about his policy intentions in the presidential campaign, FDR took an activist approach once in office — rolling out a series of major policies and creating a number of important agencies — as he viewed the federal government as an important instrument to pull the nation out of depression. Moreover, citizens began to look to the federal government for relief — especially in response to powerful exogenous forces occurring around them — a fundamental change in the conception of "liberty" to that point (Foner *et al.*, 2023).

As FDR and the Democratic Congress expanded the scope and reach of the Federal government, a national flood-control program reemerged. While not successful in 1927–1928, when Republicans controlled both Congress and the presidency and largely maintained a limited role for federal government

intervention, a nationwide policy was considered. And, thus, per O'Neill (2006, p. 149), "the idea for a national program had been planted." With the move to Democratic control of Congress and the presidency, and the considerably greater openness to federal government intervention in many facets of political–economic life in the United States, the necessary conditions for a national flood-control program were in place.

Advocates in Congress for a national flood control program sought action immediately in the 73rd (1933–1935) Congress, but more immediate attention was spent on legislation for relief for the unemployed, recovery of the economy back to normal levels, and reforms of the financial system. While national flood control was not part of the First New Deal, significant flooding in the Spring of 1935 — in New York, Washington state, West Virginia, and various parts of the Midwest and South, which caused 236 deaths and $130 million in property damage — made it an important component of the Second New Deal (Arnold, 1988). On June 12, 1935 — during the first session of the 74th Congress (1935–1936) — Rep. Riley Wilson (D-LA), Chairman of the House Flood Control Committee, introduced H.R. 8455, a bill to create a nationwide flood control program.[32] H.R. 8455 proposed 285 flood control projects in 34 states — from Vermont to California — at a cost of $370 million. The projects were diverse and included 48 large reservoirs — which also provided power development benefits in addition to their substantial flood control benefits — more than a dozen smaller dams, and a variety of levees or floodwalls.[33] As O'Neill (2006, p. 160) states: "This bill, with its specific list of projects, was modeled on the rivers and harbors bills for navigation improvements."

FDR provided some emergency flood relief aid for the afflicted areas but remained mum on his feelings about H.R. 8455. Rumors emerged that he was concerned about the bill's cost. Wilson, though, hoped to keep the heat on by pushing H.R. 8455 through the House. He planned to show, for example, that all 285 projects were investigated by the Army Corps of Engineers and received a favorable cost/benefit ratio. Still, he feared skeptics would argue the bill was just a large pork barrel (Arnold, 1988).

On August 22, 1935, the House voted on H. Res. 349, to resolve itself into the Committee of the Whole to consider H.R. 8455, and it passed, 239-112, with a large majority of Democrats defeating a large majority of Republicans.[34] Wilson had intuited Republicans' rhetorical approach to the bill, best encapsulated by a remark by Rep. Robert Rich (R-PA), the ranking Republican on the Flood Control Committee: "it is the biggest 'pork barrel' bill that has come before Congress since I have been a member."[35] But the Democrats

[32] *Congressional Record* 74th Congress, 1st session (June 12, 1935), p. 9220.

[33] For a complete list of the projects, see *Congressional Record* 74th Congress, 1st session (August 22, 1935), pp. 14181–86.

[34] *Congressional Record* 74th Congress, 1st session (August 22, 1935), pp. 14155–56.

[35] *Congressional Record* 74th Congress, 1st session (August 22, 1935), pp. 14152.

pushed these concerns aside, raised the recent devastation that flooding had caused, and emphasized the importance of the legislation for future flood control around the nation.

But one thing that Wilson had not expected was the move by many members to add their own pet flood-control projects as amendments to H.R. 8455. Most of these amendments were turned away, but some were successfully tacked on to the bill: from a small appropriation ($285,000) for channel improvements offered by Rep. Jere Cooper (D-TN) to a considerably larger amendment for levees and/or reservoirs to protect the St. Francis River in Missouri and Arkansas ($16 million) by Rep. Orville Zimmerman (D-MO). This flood of amendments by Democrats supported the Republicans' argument that the bill was just a scramble for pork — and it would only get worse in the future if such a program were approved. And, in fact, the jockeying for amendments made H.R. 8455 — now enlarged — more unpalatable for many House members. When the chamber voted later that day, H.R. 8455 passed narrowly, 153-141, with a majority of Democrats defeating a large majority of Republicans.[36] (See Table 4 for a breakdown on all H.R. 8455 votes in the House.)

While Wilson and his allies were ultimately successful, there was danger on the horizon. As Arnold (1988, p. 54) explains:

> The amendments had caused serious problems for the flood control group. The first test of strength on the bill had resulted in a favorable vote of 239 to 112, with 78 not voting. The bill lost 86 supporters after the amendments were added; 29 switched over to vote against it, and the rest decided not to vote at all.

Table 4: Roll-call votes on the Wilson–Copeland Bill (H.R. 8455) in the House, 74th Congress.

	Date		Democrat	Republican	Total	Party vote?	Majority party outcome
To Pass H. Res. 349	8-22-1935	Yea	221	15	239	Yes	Success
		Nay	36	70	112		
To Pass H.R. 8455	8-22-1935	Yea	143	7	153	Yes	Success
		Nay	70	66	141		
To Pass revised-H.R. 8455	6-3-1936	Yea	218	75	297	No	Success
		Nay	37	9	51		

Note: Third Party votes were as follows. Progressive: 0-6, 0-5, and 2-5 on the three votes, respectively. Farmer-Labor: 3-0, 3-0, 2-0 on the three votes, respectively.

[36] *Congressional Record* 74th Congress, 1st session (August 22, 1935), pp. 14198–99.

The "bloating" of H.R. 8455 only got worse when the legislation was picked up in the Senate the following day. After it was introduced by Royal Copeland (D-NY), Chairman of the Committee on Commerce, a series of amendments was proposed — all of which were approved.[37] These amendments totaled to just over $129 million, making the total cost of H.R. 8455 approximately $500 million. This rush to add pet projects to the bill drew rebuke from senators on each side of the aisle. Arthur Vandenberg (R-MI) stated: "I think it is an outrage that $500,000,000 should be authorized in 10 minutes tonight, in the closing moments of this session without any more consideration than has been given to it." Millard Tydings (D-MD) was more reserved but arrived at a similar place: "I know there is 'pork' in this bill. There is some Maryland 'pork,' and the project in Maryland is a good one, and I should like to see it go into the bill. But, gentleman, we have not the money with which to indulge in this business at this time." Huey Long (D-LA) spoke in favor of the bill — "this is not a sectional bill by any means. . . . the bill affects the welfare of the people of the entire United States" — but it seemed flat in the face of reasonable criticism.[38]

Late in the debate, Tydings moved to recommit the bill to the Committee on Commerce with instructions to report it to the Senate when it convened in January 1938. He did so, he argued, "in order to show the people of America that the Senate is not a wasteful body, that it does not pass upon legislation of this magnitude without any report from the Army engineers, without any examination by the committee of the individual items, and having regard for the condition of the Treasury and the imminence of new taxes."[39] Shortly thereafter, the Senate considered Tydings' motion to recommit with instructions, and it was adopted, 29-20, with a bare majority of Democrats unsuccessfully opposing all but one Republican.[40] As a result, H.R. 8455 was dead for the time being. (See Table 5 for a breakdown on all H.R. 8455 votes in the Senate.)

As the second session of the 74th Congress convened in early 1936, supporters of H.R. 8455 — now known as the Wilson–Copeland bill — believed they had a difficult road ahead in the Senate. A bipartisan coalition of senators defeated the bill in August, and there was little reason to believe a change was at hand. But Mother Nature came to the rescue as several large storms hit portions of the Midwest, Mid-Atlantic, and Northeast in March. Combined with cold weather and large snowfalls across the areas in 1935–36, and with much of the snow still in place, flooding quickly occurred. Record-setting flooding was the result, notably in the Northeast. When all was said and done,

[37] *Congressional Record* 74th Congress, 1st session (August 23, 1935), pp. 14286–87.

[38] Remarks by Vandenberg, Tydings, and Long appear in *Congressional Record* 74th Congress, 1st session (August 23, 1935), pp. 14288–89, 14291.

[39] *Congressional Record* 74th Congress, 1st session (August 23, 1935), pp. 14303.

[40] *Congressional Record* 74th Congress, 1st session (August 23, 1935), pp. 14304–05.

Table 5: Roll-call votes on the Wilson–Copeland Bill (H.R. 8455) in the Senate, 74th Congress.

	Date		Democrat	Republican	Total	Party vote?	Majority party outcome
To Recommit HR 8455 to Commerce Committee	8-23-1935	Yea	18	9	29	Yes	Roll
		Nay	19	1	20		
Bennett (D-MO) Amendment	5-20-1936	Yea	14	16	31	Yes	Block
		Nay	37	1	40		
Bilbo (D-MS) Amendment	5-21-1936	Yea	13	2	15	No	Block
		Nay	36	16	55		
Guffey (D-PA) Amendment	5-21-1936	Yea	10	1	11	No	Block
		Nay	33	16	52		

Note: Third Party votes were as follows. Progressive: 1-0, 0-1, 0-1, and 0-1 on the four votes, respectively. Farmer-Labor: 1-0, 1-1, 0-2, and 0-2 on the four votes, respectively.

between 150 and 200 people lost their lives and damages were in the hundreds of millions of dollars (Grover, 1937).

Flooding reached the nation's capital in the third week of March. The Potomac River crested at 18.5 ft under Key Bridge — the only bridge connecting the district to Virginia that remained operational — and large portions of the National Mall were flooded. Senate hearings had begun on the Wilson–Copeland bill, and for its supporters the flooding on Congress' doorstep — despite its destruction — had a silver lining. As Arnold (1988, p. 64–65) explains: "The congressmen, as well as the entire population of the northeastern United States, finally saw what residents of the lower Mississippi had talked about for decades — a great flood that could cripple an entire section of the nation."

Members of Congress were quick to signal their empathy for constituents and to get legislation done. Sen. Copeland and his Committee on Commerce thus got to work. Copeland's goal was to make H.R. 8455 a bill that was exclusively about flood control and sought to eliminate any hydroelectric power programs — a position shared by the Army Corps of Engineers. Within the committee, there were disagreements about how many projects to keep and whether there should be any federal-local cost sharing arrangements. FDR was cagey about his preferences for federal-local cost sharing — rumors were that he did not want the federal government to pay for everything — but stated that he wanted multipurpose river basin development. Whether he thought

this should be part of the flood control bill — or separate from it — was unclear. He also expressed support for soil erosion programs and reforestation in addition to levees and reservoirs. The committee read what they could from these various signals and amended the Wilson–Copeland bill accordingly (Arnold, 1988).

On May 19, 1936, Copeland reported the revised H.R. 8455 to the Senate floor, with debate beginning the following day.[41] The committee was successful at paring back amendments, specifically those opposed by the Chief of Engineers. Programs retained were primarily focused on the flood-stricken (and populous) Northeast, and programs eliminated were large reservoirs in Arkansas and the White River basins. A complicated formula for federal-local cost sharing was included, to satisfy the White House. Finally, the bill's cost was also kept down — at $310 million (O'Neill, 2006).

The Senate debate, as Arnold (1988, p. 87) notes, "while lengthy, was anticlimactic." The Democratic voice against the bill from 1935, Sen. Tydings, was silent — in large part because his home state of Maryland was significantly affected by the recent flooding. And those who were swayed by his earlier arguments were not interested in standing in the way of policy that many thought was necessary. Serious amendments were few. Champ Clark (D-MO) sought to amend the provision in the bill providing the president with the primary authority for the adoption, authorization, and prosecution of improved navigation and flood control projects — by instead placing said authority with the Army Corps of Engineers. It failed, 31-40, with a majority of Democrats defeating a majority of Republicans.[42] Two other amendments, offered by Theodore Bilbo (D-MS) and Joseph Guffey (D-PA), sought to delete the section of the Wilson–Copeland bill that required local interests to pay for land and damages — but both failed, 15-55 and 11-52, respectively, with majorities of both parties aligning.[43] Finally, near the end of the day on May 21, 1936, debate was brought to a close, and the revised H.R. 8455 was considered and passed on a voice vote.[44]

The revised bill then went back to the House where members from Missouri, Oklahoma, Arkansas, and Louisiana were critical. This was to be expected, as the committee amendments to H.R. 8455 had eliminated many flood control reservoirs in the South (those that primarily offered hydroelectric water-power benefits). But aside from these complaints, there was little opposition. On June 3, 1936, the revised Wilson–Copeland bill was considered and passed,

[41] *Congressional Record* 74th Congress, 2nd session (May 19, 1936), p. 7509.

[42] *Congressional Record* 74th Congress, 2nd session (May 20, 1936), p. 7589.

[43] *Congressional Record* 74th Congress, 2nd session (May 21, 1936), pp. 7696, 7703. There was considerable public support for the federal government picking up the tab completely. But Copeland feared that the president would veto legislation of that kind.

[44] *Congressional Record* 74th Congress, 2nd session (May 21, 1936), pp. 7710.

297-51, with large majorities of both parties in support.[45] It was engrossed on June 15 and sent to President Roosevelt.[46] There were lingering worries that FDR could veto the legislation — for some reason — but these proved to be unfounded. On June 15, 1936, he signed the legislation — and it became the Flood Control Act of 1936.[47]

The Flood Control Act of 1936, as Moore and Moore (1989, p. 13) note, "recognized that floods were a menace to national welfare, declared flood control a proper federal responsibility, and established a national policy on flood control." In many ways, it was the culmination of work started decades before by flood-control advocates who sought federal intervention in more than a piecemeal (or regional) fashion. Money had been available to promote extensive navigation on US waterways — via rivers and harbors legislation — since the 1820s, but preventing the repercussions of extreme weather (in the form of flooding) was often overlooked. The Flood Control Act of 1936 was the long-awaited solution. The only limitations on federal flood control projects thereafter were that the economic benefits had to exceed the costs and local interests had to meet certain requirements.

Multivariate Analysis

In this section, we examine all votes relating to the Flood Control Acts of 1917, 1928, and 1936 more systematically — using regression analysis. We are interested in determining whether certain factors — principally party, member ideology, and region — were significantly associated with individual vote choices, as well as whether these potential relationships varied over time (and the various acts).

The Flood Control Act of 1917

We analyze five roll calls in the Senate — those listed in Table 2 — on the Humphreys–Ransdell bill (H.R. 14777). Our unit of analysis is the senator vote on a given roll call. For each vote, we identify the direction that was in favor of the bill's passage, which is not always affirmative votes. Three amendments received roll calls, and contemporaneous and historical descriptions of the process indicate that the amendments sought to make the bill less likely to pass. This coded variable, which we call *Pro Flood Bill Vote*, is "1" when the member cast a vote that advanced the bill toward passage, and "0" when they voted in the opposite direction. All others, such as those not

[45] *Congressional Record* 74th Congress, 2nd session (June 3, 1936), pp. 8862–63.
[46] *Congressional Record* 74th Congress, 2nd session (June 15, 1936), pp. 9443.
[47] 49 *Stat.* 1570.

voting or paired votes, are dropped. Pro Flood Bill Vote is our dependent variable.

For explanatory variables, we include both the *First* and *Second Dimension NOMINATE* scores — common measures of political ideology for members of Congress — in their pure Common Space form.[48] We also include party indicators, in which *Republican* is an independent variable and Democrat is the base category. To reflect the fact that some states needed flood control policy more than others, in ways that might overwhelm ideological or partisan interests, we include an indicator of whether the Senator's state touched the *Lower Mississippi* River. Also, because the 1917 bill came in response to flooding crises on both the lower Mississippi and Sacramento Rivers, we include a variable that adds California to the Lower Mississippi variable, which we call *Lower Mississippi + California*.

Finally, 1917 — when four of our five roll calls took place — is notable for Senate turnover. Six senators retired. An additional 14 were defeated in seeking re-election. This means that 21% of the chamber in early 1917 were "lame duck" senators, due to leave the chamber in the near-term future.[49] Indeed, the final four Senate votes that we consider were among the last recorded votes of the 64th Senate. Thus, we code an additional variable, *Lame Duck*, for the 20 senators casting votes on those four roll calls when they were already set to leave the chamber.

As the dependent variable is dichotomous, we use logistic regression. Each model contains roll call fixed effects, with standard errors clustered at the level of the individual senator. In total, we observe 276 cast votes across the five roll calls, with 81 unique senators casting at least one vote. Given that there were 96 senators at the time, this reflects substantial absenteeism or abstention in voting, something we observe consistently on flood votes in the first half of the twentieth century. We present the results in Table 6.

Our results suggest the importance of local impact on senators' votes. Neither Republican nor the First Dimension NOMINATE score are significant. The Second Dimension NOMINATE score is highly associated with vote outcome, but this dimension lacks a substantive interpretation in the

[48]NOMINATE stands for "nominal three-step estimation," and uses roll-call votes as inputs to scale legislators from left to right on one or more issue dimension. NOMINATE scores — the outputs from the estimation procedure — range from −1 (liberal) to +1 (conservative), with a single (first) issue dimension (capturing conflict over economic redistribution, or the role of the government in the economy) having the most explanatory power. A second issue dimension is sometimes important to capture important issues that are not captured by the primary (first) issue dimension—these scores, again, range from −1 (liberal) to +1 (conservative). For more on NOMINATE scores, see Poole and Rosenthal (2007) and Everson *et al.* (2016).

[49]The rest of 1917 and 1918 would also see 10 senators die mid-Congress, leading to 30 total replacements in about 18 months.

Table 6: Covariates of support for the Humphreys–Ransdell Bill (H.R. 14777), 67th Congress.

	Model 1	Model 2
First Dimension NOMINATE	$-2.79^{\wedge}$	-2.22
	(1.63)	(1.48)
Second Dimension NOMINATE	-2.11^{**}	-2.20^{**}
	(0.54)	(.53)
Republican	1.08	0.69
	(1.21)	(1.14)
Lower Mississippi	2.80^{**}	
	(0.96)	
Lower Mississippi + California		2.75^{**}
		(0.68)
Lame Duck	0.73	0.13
	(0.59)	(0.54)
N	276	276
PRE	33.7%	38.6%
Clusters	81 Senators	81 Senators
Roll call fixed effects	✓	✓

Note: $^{\wedge}0.05 < p < 0.10$, $^{*}0.01 < p < 0.05$, $^{**}p < 0.01$

64th Congress (Poole and Rosenthal, 2007). We also find no evidence that lame-duck senators were more likely to support the bill.[50] This leaves presence on the Lower Mississippi River (or the alternative measuring including California) as the variable with the most explanatory power. Those that had experienced the recent flooding crisis were about 38 percentage points more likely to support the bill than those that had not. This association dwarfs all others in the model. Indeed, adding the river variable (in Model 2) increases the Proportional Reduction in Error (PRE) from 18.8% to 38.6%. In short, those that were recovering from the major flooding crises of the mid-1910s almost universally supported the policy, while those that did not were only about even odds to support the bill.

The Flood Control Act of 1928

We conduct an analysis of votes on the Jones–Reid bill (S. 3740) — those listed in Table 3 — using the same approach as our analysis for the Humphreys–Ransdell Bill (H.R. 14777). All variable definitions repeat except there were

[50]We do find, however, that lame-duck senators were about 23 percentage points more likely to be absent from the vote or otherwise abstain from voting in comparison to non-lame-duck senators.

Table 7: Covariates of support for the Jones–Reid Bill (S. 3740), 70th Congress.

	Model 1
First Dimension NOMINATE	-4.28^{**}
	(1.40)
Second Dimension NOMINATE	0.46
	(0.32)
Republican	-2.46^{*}
	(1.12)
Lower Mississippi	4.04^{**}
	(0.54)
N	689
PRE	61.4%
Clusters	349 Members
Roll-call fixed effects	✓

Note: $^{\wedge}0.05 < p < 0.10$, $^{*}0.01 < p < 0.05$, $^{**}p < 0.01$.

no lame-duck senators, so that variable is dropped. In this case, we have two votes from the House on S. 3740.[51] We report the results in Table 7.

This Mississippi River flood control package shows more distinct partisan and ideological voting. Democrats and liberals were far more in favor of the bill, with the First Dimension NOMINATE and Republican variables statistically significant (and negative). In addition, the Lower Mississippi variable has a strong association with support, unsurprisingly. Holding NOMINATE scores and party constant, representatives from states on the Lower Mississippi were about 34 percentage points more likely to support the bill. Thus, House voting on the Jones–Reid Bill (S. 3740) in the 70th Congress reflects clearer partisan and ideological behavior than observed on Senate voting on the Humphreys–Ransdell Bill (H.R. 14777) in the 64th Congress, but it still shows that local interests were strongly associated with vote choice.

The Flood Control Act of 1936

We analyze voting on the Wilson–Copeland Bill (H.R. 8455) much as we did in the preceding two cases. For this analysis, we have seven total roll calls: three from the House and four from the Senate. We maintain our variables and model specifications from our first two analyses (with Lame Duck again dropped because no members qualified). We report the results in Table 8.

[51] A third roll call was taken on the bill in the Senate on March 28, 1928, but the vote was unanimous 70-0, and so it is dropped from our analysis.

Table 8: Covariates of support for the Wilson–Copeland Bill (H.R. 8455), 74th Congress.

	Model 1
First Dimension NOMINATE	-3.08^{**}
	(0.74)
Second Dimension NOMINATE	1.02^{**}
	(0.22)
Republican	-0.25
	(0.45)
Lower Mississippi	0.31
	(0.28)
N	1,215
PRE	36.91%
Clusters	497 Members
Vote fixed effects	✓

Note: $^{\wedge}0.05 < p < 0.10$, $^{*}0.01 < p < 0.05$, $^{**}p < 0.01$.

More liberal members voted more often in favor. The Second Dimension NOMINATE score, though again not substantively interpretable, is highly significant.[52] With ideology held static, there is no separate relationship for partisanship. This leaves the local importance of the policy. Lower Mississippi is not a statistically significant predictor. This makes sense as the Wilson–Copeland Bill (H.R. 8455) directed resources to several different areas prone to flooding, not just to the Lower Mississippi. This reduced the difference in incentives between those we code as "1" and those as "0" on this variable — and thus reduced the strength of its association.

The Wilson–Copeland Bill (H.R. 8455) may have also reflected a broader nationalization of flood policy, moving away from just the Mississippi River region. One way to assess this is using membership on the House Committee on Flood Control. Specifically, we question whether committee membership diversified after Congress designed more national policies that could be the subject of future legislation and revision. In other words, the Flood Control Act of 1936 may have incentivized a broader set of members to invest in flood control — as it may have helped their part of the country (and thus their own electoral fortunes) in the future.

To test this, we track membership on the committee from its inception in 1916 until it was dissolved as a standalone committee in 1946. Our unit of analysis is the individual member in a given Congress and our dependent

[52]That the Second Dimension is highly significant and positive for the 74th Congress but highly significant and negative for the 64th Congress on substantially similar policy indicates the difficult of interpreting this dimension substantively.

variable is *Flood Committee*, which takes the value "1" when the member was on the committee and "0" otherwise. For explanatory variables, we include party indicators, First and Second Dimension NOMINATE scores, Lower Mississippi, as defined in our previous models, and two new variables: *Majority*, for whether the member was part of the majority party in the House (which received more committee seats), and *Post-74th*, which takes the value "1" in all subsequent congresses and the value "0" otherwise. Finally, we interact Post-74th and Lower Mississippi to get a measure of whether geographic proximity to the lower Mississippi declined in importance for committee membership after the adoption of national flood-control policy. We report the results in Table 9.

We find that members from the Lower Mississippi were more likely to be on the committee than those from elsewhere in the country. In the years before the new policymaking of the 74th Congress, this was about a 4.5 percentage point increase ($p < 0.01$) — which fell to a 1 percentage point advantage after the reform (though it is not significant). This reflects the diversification of membership after national flood-control policies were put into place, incentivizing time investment from those outside the region. Little else has much explanatory power on committee membership. The model itself adds little because the committee was quite small and the vast majority of members

Table 9: Covariates of membership of the House Committee on Flood Control.

	Model 1
First Dimension NOMINATE	0.38
	(0.80)
Second Dimension NOMINATE	0.45∗
	(0.20)
Republican	−0.00
	(0.62)
Majority	0.15
	(018)
Lower Mississippi	0.95**
	(0.27)
Post-74th Congress	0.52**
	(0.20)
Lower Mississippi X Post-74th Congress	−0.80^
	(0.42)
N	7,159
PRE	0.0%
Clusters	1,964 Members

Note: ^$0.05 < p < 0.10$, *$0.01 < p < 0.05$, **$p < 0.01$.

never served on it. Thus, the naïve prediction of not being on the committee properly explains about 95% of the data, making improvement on this naïve prediction extremely difficult. That said, we have some suggestive evidence that introducing national policy incentivized a broader set of members to specialize in this policy area.

Conclusion

The path from the first federal entrée into flood control policy in the mid-1850s to the acceptance that flood control was a federal responsibility in 1936 was not a direct one. Federal flood control was done in a haphazard and piecemeal way through the early-twentieth century, in part because the federal government was still relatively small and limited in its scope. With the advent of the Progressive Era, the federal government began to expand its reach, and this overlapped with flood control policy.

In the 1917 Flood Control Act, Congress recognized for the first time an obligation to assist flood-prone areas in the lower Mississippi River Valley (and the Sacramento River basin), and it established a cost-sharing requirement with local levee boards. That 1917 federal commitment to flood control was further strengthened in the wake of the Great Mississippi River Flood of 1927. In the Flood Control Act of 1928, Congress continued to support federal flood control efforts on the entire Mississippi River and pushed the Army Corps of Engineers away from its singular "levees-only" approach to prevent flooding. Finally, in the Flood Control Act of 1936, adopted during a time of federal government expansion and in response to significant flooding in the Northeast, Mid-Atlantic, and other portions of the country, Congress explicitly recognized that flood control was a federal responsibility — to promote the general welfare of the people of the country as a whole — in cooperation with the states and local governments and carried out by the Army Corps of Engineers. A key provision of the 1936 Flood Control Act was that each federal project had to have economic benefits that exceeded costs before it could go forward, and it also put in place requirements for local contributions to the flood control projects.

In accompanying multivariate analyses, we find that more liberal members of Congress were increasingly inclined — irrespective of party — to support flood control legislation. We also find that members representing states/districts along the Mississippi River were also more inclined (controlling for all other factors) to support early legislation — the bills that would become the Flood Control Acts of 1917 and 1928 — but this regional effect largely disappeared as flood control appropriations nationalized (i.e., covered a wider geographic area). Specifically, there was no regional effect on the voting on the Flood Control Act of 1936.

The Flood Control Acts of 1917, 1928, and 1936 are considered "landmark laws" (Stathis, 2014), but additional flood control legislation has been enacted since then as needed and to adjust to changing circumstances. Extreme weather continued to batter parts of the United States, for example, and despite federal intervention, the problem of flooding did not go away. Case in point, in the 34 years before the Flood Control Act of 1936, flood damages approximated $4.1 billion; in the 22 years after the 1936 Act, losses amounted to $6.6 billion (Willingham, 2014). And with climate change continuing to be a cause for concern — with hurricanes in the Southeast, and their massive damage, being the chief source of destruction in recent years — active and robust federal flood control will continue to be critical for the foreseeable future.

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