FUNDING DISPARITIES AMONG MISSISSIPPI LOCAL WATER SYSTEMS

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AUTHORS & ACKNOWLEDGEMENTS

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The individuals acknowledged here do not necessarily agree with or endorse the analysis and conclusions in this report. Further, the ideas expressed are those of the authors and do not necessarily reflect those of the Delta Directions Consortium as a whole or its partner organizations. Any errors are attributable to the authors alone.

FUNDING DISPARITIES AMONG MISSISSIPPI LOCAL WATER SYSTEMS REPORT

Acronyms Used in this Report	
CWSRF	Clean Water State Revolving Fund (national)
DWSRF	Drinking Water State Revolving Loan Fund (national)
DWSIRLF	Drinking Water Systems Improvements Revolving Loan Fund (Mississippi Program to receive federal DWSRF funds)
EPA	Environmental Protection Agency
IIJA	Infrastructure Investment and Jobs Act
SDWA	Safe Drinking Water Act
WPCRLF	Water Pollution Control Revolving Loan Fund (Mississippi Program to receive federal CWSRF funds)

INTRODUCTION

This Report examines funding for water infrastructure projects in Mississippi. The Report focuses on two funds—the Drinking Water Systems Improvements Revolving Loan Fund (DWSIRLF) and the Water Pollution Control Revolving Loan Fund (WPCRLF)—administered by the State of Mississippi with federal authorization and support from the Environmental Protection Agency (EPA). The national Drinking Water State Revolving Fund Program (DWSRF) provides federal funding for Mississippi's DWSIRLF and the national Clean Water State Revolving Fund Program (CWSRF) provides federal funding for Mississippi's WPCRLF. Mississippi has many public water systems; however, Mississippi's infrastructure is aging and lacks the capital investment and revenue base to keep up with operation, maintenance, and upgrade needs. For this final category—vital upgrades—these revolving fund programs provide essential support to communities. This funding, however, is unevenly distributed throughout Mississippi and is difficult to access for some of the communities that need it most.

Nationally, the overwhelming majority of funding for water and wastewater systems comes from user fee revenue and municipal bonds.[1] Federal and state revolving funds account for just a few percentage points of overall funding.[2] But, because of the importance of user fee revenue, revolving funds—and other government funds—are critical for water and wastewater systems whose service areas include many low-income customers.[3] The COVID-19 pandemic has made the need for non-user fee funding sources even more acute. States across the country, including Mississippi, implemented moratoria on utility shutoffs,[4] and the corresponding nonpayment of utility bills has further stretched utility finances.[5] Thus, the DWSIRLF and WPCRLF programs are even more important sources of potential funding for water systems in the disproportionately low-income Mississippi Delta Region.[6]

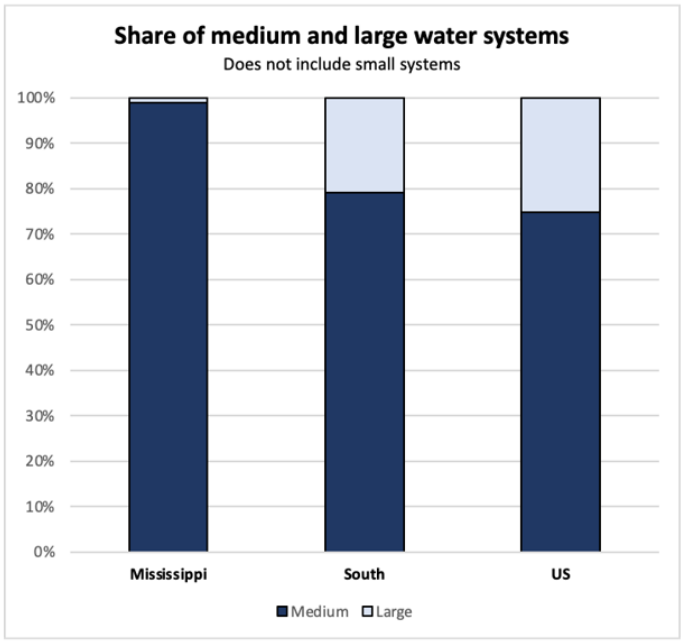
Understanding Mississippi's water infrastructure funding needs requires understanding the state's water systems. Water systems are classified by the EPA as large, medium, or small based on the number of people the system serves.[7] Most states' water infrastructure consists of several large systems supplemented by medium systems and isolated small systems serving hard-to-reach communities.[8] Mississippi's water infrastructure, by contrast, is dominated by small and medium systems. Nationally, for every large system a state has, it has four medium systems. Mississippi has only one large water system and has 87 medium systems, approximately 22 times higher than the national average.[9] Whereas almost all other states' water systems demonstrate at least a significant degree of consolidation and scale, Mississippi's water infrastructure is a patchwork of small and medium systems.

Mississippi's water infrastructure *need* (i.e., infrastructure needs that would be eligible for DWSRF/DWSIRLF support) is commensurately Balkanized. According to the EPA's estimates, 38% of water infrastructure need nationwide comes from large systems while only 16% comes from small systems.[10] For Mississippi, those figures are flipped: only 5% of need comes from its large system while 43% comes from its small systems.[11] These dynamics are not regional. Mississippi's water infrastructure is markedly different not just from the national average but from the South specifically, as well.

A final introductory consideration is the effect of the recently enacted Infrastructure Investment and Jobs Act (IIJA) on Mississippi's water infrastructure funding. IIJA provides significant increases in funding for drinking water and wastewater infrastructure. A portion of this funding increase is reserved for lead line replacement and investments addressing emerging contaminants, but the Act contains increased funding for state revolving fund general programs, as well. These funds will primarily be distributed through formula grants to states over the next five years. Several features of this legislation have implications for Mississippi:

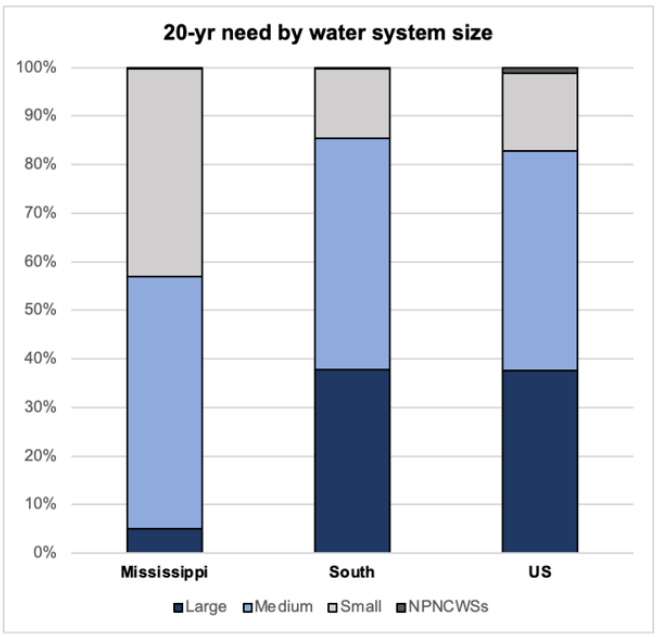
- **Increased funding availability.** IIJA increases DWSRF funding to approximately six times its funding level from recent years.[12] The CWSRF also saw a substantial increase in funding. Mississippi will receive $75 million in formula grants for these programs in 2022 under the Act.[13] **Table 1** shows the total appropriations under IIJA for each major water infrastructure funding program.
- **Reduced state matching requirements for supplemental funds.** For FY2022 and FY2023, the Act reduces the state matching requirement from 20% to 10% for the supplemental funding for both CWSRF and DWSRF.[14] This reduction could augment Mississippi's ability to take on federal funding for water infrastructure projects. Beginning in FY2024, however, the match requirement will return to 20%.[15] Funding for each SRF is discussed in further detail below.

Figure 1. Total Number of Large and Medium Water Systems



Source: Env't Prot. Agency, Drinking Water Infrastructure Needs Survey and Assessment: Sixth Report to Congress (2018)

Figure 2. Total 20-yr Water Infrastructure Funding Need



Source: EPA Drinking Water Infrastructure Needs Survey and Assessment: Sixth Report to Congress (2018)

- **Technical support for small water systems.** IIJA amends the Safe Drinking Water Act to provide $50 million in grant funding annually to states, local governments, and other entities to promote the "operational sustainability of one or more small water systems."[16] These grants carry with them a 10% matching requirement, but that requirement can be waived by the EPA.

Table 1. Total Funding Appropriation Under IIJA from FY2022–26 by Program and Use

Funding program	**Use**	**Total appropriation, FY22–26** ($ millions)
Clean Water State Revolving Fund Program	General Program	11,713
	Emerging Contaminants	1,000
Drinking Water State Revolving Fund Program	General Program	11,713
	Lead Service Line Replacement	15,000
	Emerging Contaminants	4,000
Small and Disadvantaged Community Grant Program	Emerging Contaminants	5,000

Source: Congressional Research Service, Infrastructure Investment and Jobs Act (IIJA): Drinking Water and Wastewater Infrastructure (2022)

METHODOLOGY

This report outlines the available funding and subsidization structures for each revolving fund program. The analysis includes insights and recommendations gleaned from interviews with engineers, academics, lawyers, and politicians all working in Mississippi and experienced in these revolving fund programs. The report also relies on data drawn from annual Mississippi state reports, which provide a picture of which counties do and do not apply for and receive funding. Variations in the analysis for the two revolving funds can be attributed to the differences in information available and reported for each fund.

For DWSIRLF, the research team sourced data from the Annual Reports that the program submits to the EPA and publishes on the Mississippi State Department of Health's website for each fiscal year.[17] The team compiled data from summary tables in the Annual Reports for fiscal years 2010 through 2020 and used population data from the 2020 U.S. Census to support the analysis. Additional data on drinking water facility violations and site visits were found in the EPA's Safe Drinking Water Information System Federal Reporting Services.[18]

For WPCRLF, the research team compiled line-by-line project data using the Intended Use Plans for each fiscal year from 2011 through 2021, inputting projects from both the priority and planning lists.[19] The data analysis for WPCRLF focused more heavily on demographic implications of the project funding, relying on imported datasets from the National Environmental Public Health Data Explorer.[20] Population data for the analysis came from county level data from 2019. For both Revolving Loan Funds, median income data were from 2018. The datasets for both Revolving Loan Funds are attached as data worksheets (see Appendix A for DWSIRLF and Appendix B for WPCRLF).[21]

OVERVIEW OF ANALYSIS & BARRIERS TO FUNDING ACCESS

Our nation's drinking water and wastewater infrastructure is in dire need of funding to rehabilitate and improve aging and faulty systems. The failing of this infrastructure directly threatens our environment and health. The recent water crisis in Jackson, Mississippi, which left

tens of thousands of people without running water and put the city under a boil notice, highlighted the deteriorating state of Jackson's water infrastructure.[22] Deteriorating water infrastructure is a widespread problem throughout Mississippi, including the Delta, where some families have lacked access to running water as recently as this past year.[23] In 2020, the American Society of Civil Engineers gave Mississippi's wastewater and drinking water infrastructure systems both a grade of D.[24] These deficiencies do not impact all communities to the same degree; disparities in infrastructure are linked to race and income.[25] The water infrastructure crisis is acutely felt in communities of color and low-income communities where infrastructure needs are often overlooked and poorly maintained through what may be described as a form of "benign neglect."[26]

Mississippi has both federal and state funding available to help address these water infrastructure issues. This Report examines how that funding is being distributed throughout Mississippi and evaluates factors that may be contributing to disparities in where that funding is concentrated.

The DWSIRLF and the WPCRLF are state-run funds that provide low-interest loans to municipalities and utility entities in Mississippi for the purpose of building, upgrading, and maintaining, drinking water and wastewater infrastructure, respectively. Both programs are funded primarily by federal capitalization grants (Federal Cap Grants) provided by the EPA and each has a 20% state matching requirement. The programs also sustain some funds through interest and principal payments on outstanding loans.

Both programs offer funding opportunities specifically aiding low-income communities. The statutes governing DWSRF (which funds DWSIRLF) require that a certain percentage of the cap grant (20–49% for FY2021) be made available as grant funding to low-income communities through principal forgiveness of up to $500,000. Principal forgiveness is calculated by comparing the loan recipient's median household income with that of the state as a whole. WPCRLF has a similar principal forgiveness program that awards forgiveness, up to $2 million, based on median household income and population. WPCRLF factors in additional forgiveness-worthy attributes such as declining population, rising unemployment rates, and existing within an "economically distressed area."

Despite the steps Mississippi has taken to incentivize small and low-income communities to apply for project funding from one of its EPA-backed revolving loan funds, these communities are less likely to apply for and receive loans. As shown in the analysis below, much of the revolving loan funds are distributed to counties with Mississippi's largest population centers. This disparity does not appear to be due to lack of need. For instance, several projects eligible for subsidization on the WPCRLF Planning list do not currently meet the final effluent limits prescribed by the Clean Water Act,[27] yet project leaders have not finalized their funding applications.

Our analysis of DWSIRLF funding history found that counties in the Delta are not applying for or receiving funding to the same extent as counties in other parts of Mississippi. The majority of funded projects are concentrated in a handful of counties in southern and central Mississippi,

with large funding gaps around the northwest and northeast, including the Delta. The majority of the highest dollar-award grants also tend to be distributed from the capital region to the coast. Additionally, DWSIRLF funding tends to go to more populous communities. However, per capita funding does seem to be inversely related to income—that is, loan recipients with the lowest median income tend to receive the most funding per capita, when they do receive funding.

In the case of WPCRLF, communities in the middle-income ranges have typically received the highest number of individual grants. Average per capita funding tends to skew towards wealthier communities, with a huge drop off in communities with median incomes of $20,000 to $29,999. Project funding per person tended to be higher in counties with a higher percentage of people of color or a higher Language Social Vulnerability Index; however, this finding may have been skewed by certain outliers in the data set.

Over the course of our research and informational interviews, several potential reasons for the disparity emerged. First, potential applicants may be reluctant to take on these loans and opt to hold off in hopes of obtaining grant money instead. Grant programs that do not entail repayment are understandably more attractive, even if the probability of securing such funds is low. Small and low-income communities have more limited tax bases and a long-term loan may be a risky undertaking. Additionally, communities with outstanding debt may be ineligible for new funding, though they might obtain special permission from Rural Utilities Services to apply. Existing debt, alongside general budgetary constraints, may nevertheless deter applicants.

Second, Mississippi does not guarantee principal forgiveness for an applicant in advance. The resulting uncertainty can make potential applicants hesitant to move forward. This lack of guarantee may be partially due to technical specifications around receipt of Federal Cap Grants each year. Subsidy availability depends on federal funding, which in turn depends on appropriations or other revenue raising decision the Mississippi legislature makes for the WPCRLF and DWSIRLF in a given year.[28] While state and federal deposits have remained fairly stable over time (see **Figure 4** for DWSIRLF funding and **Figure 13** for WPCRLF funding, below), continuation is still subject to some legislative discretion, thus undercutting a "guarantee" for future projects.

While the research team focused on understanding the contours of the revolving loan fund programs, trends in funding, and challenges in funding access, a natural next question is what policy solutions could address the most notable challenges. We posit several potential solutions as starting points for discussion; however, more conversations with stakeholders and policymakers are needed to better understand the factors that shape the challenges noted, to identify other potential barriers, and to evaluate these and other potential solutions. Following publication of this Report and in the coming year, our team will continue engaging with stakeholders and experts to assess potential steps forward; the ideas below should be read as a starting point for conversation rather than a policy platform.

Challenge: Mississippi's annual legislative process for determining its match contribution creates uncertainty around subsidy availability for small and low-income community projects.

- ***Potential Solution:*** Mississippi could explore legislation that would require a certain level of state funding for the programs instead of leaving that amount—which is relatively consistent year-to-year—to the annual appropriations process.
- Note: Recent increases to the federal funding stream, most notably through the Infrastructure Investment and Jobs Act of 2021 (IIJA)[29], will infuse much-needed resources to make loan forgiveness more certain. The IIJA is expected to increase DWSRF annual appropriations sixfold, adding an average of $6.14 billion per fiscal year.[30] Despite the increase in available federal funds, Mississippi will still rely on state-based contributions to come close to its total need. The state's 20-year need in January 2015 dollars was estimated at $4,823.2 million across all water systems.[31] Mississippi also received funding through the American Rescue Plan Act of 2021 that will be used to create new grant funding programs for water and wastewater infrastructure, including one that targets Rural Water Associations.[32]

Challenge: Multiple factors come into play when calculating the principal forgiveness and these factors can end up increasing the amount of principal forgiveness a loan recipient receives. Consequently, by the time a project is completed, an applicant may be eligible for more principal forgiveness then they were told at the time of the initial application. If the principal forgiveness amount could be estimated with more accuracy early in the application process, eligible communities could have a greater incentive to apply.

- ***Potential Solution:*** Mississippi could develop tools to help potential applicants better project principal forgiveness for qualifying projects prior to beginning the application process. Additional mechanisms for guaranteeing future principal forgiveness should be explored.

Challenge: Small and low-income communities that often have the most serious infrastructure needs are often reluctant to go through the process to apply for loans.

- ***Potential Solution:*** Mississippi should find ways to support communities throughout the application process. In addition to finding ways to better guarantee subsidization, Mississippi could provide grants and technical assistance to support communities through the application process.

Challenge: Developing a project application requires the hiring of an engineer. According to Mississippi stakeholders familiar with these revolving funds, consulting engineers in many ways drive the program. Most of the work done to obtain the loans and navigate the application process is done by the engineers. Therefore, it is critical for potential applicants to connect with engineers familiar with these revolving funds. Although a loan recipient can use an award to cover costs—like hiring an engineer—once they have received the loan, this up-front expense may be burdensome and deter some potential applicants. However, many of the engineers will do a lot of this work out of their own pockets and then wait to get reimbursed once the loans come through. Although this may decrease the upfront financial burden on applicants, the delayed payout may still act as a deterrent for these projects. More research is needed into this issue. Finally, towns and municipalities who do not work with engineers familiar with these

revolving funds may miss out on the opportunity to apply due to a lack of knowledge about their existence or process.

- ***Potential Solution:*** Resources could be made available to help direct potential applicants towards engineers familiar with these funds. Although applicants will need to go through the federal procurement process[33] before hiring an engineer, such a resource could provide a helpful starting point. MDEQ and MSDH could also help connect municipalities found to have drinking water facility violations to engineers familiar with the revolving funds. In addition, Mississippi could establish a fund to cover engineer and planning expenses for communities that fall below a certain income threshold. The fund could provide grants or forgivable loans to help cover this specific cost, separate from the loan to support the project. Mississippi could also explore incentive schemes to encourage engineers to accept public projects on a contingency basis. Providing this financial support could allow engineers to more proactively reach out to communities that would benefit from these funds.

Challenge: Small and low-income communities often face a funding gap between local revenue raised to maintain a water system and the costs to maintaining that system. Drinking and wastewater systems typically depend on utilities rates to cover maintenance costs and raising rates may not be feasible. Though small and low-income communities face water infrastructure challenges nationwide, Mississippi faces a disproportionately high level of need for its community water systems serving 10,000 or fewer people.[34] The EPA estimated 71% of Mississippi's community water systems in need serve 10,000 or fewer people. This number is significantly higher than the nationwide average estimate hovering just below 30%.[35] Put differently, of the community water systems in need, 71% of Mississippi's serve 10,000 or fewer people; for other states, this number drops to 30% on average.

- ***Potential Solution:*** A commonly proposed solution for addressing this issue is to consolidate smaller, lesser-resourced systems with one another or with larger systems to better distribute costs. More research is needed to determine which strategies would work best in Mississippi. Increased investment and coordination at the state level is likely necessary to support general operation and maintenance of these systems.

Challenge: Communities often lack information about the availability of the revolving loan funds, loan eligibility, and the application process.

- ***Potential Solution:*** Mississippi could encourage communities to take advantage of loan funding by creating publicity materials and providing toolkits for community leaders and public entities on how to apply for loans. Materials should specifically highlight opportunities to receive principal forgiveness and mitigate up-front costs with awarded funds. Our toolkit, "Applying for a Clean Water Revolving Loan Fund: A Toolkit for Policymakers," is designed to provide a model of what such outreach could look like. Connecting communities to engineers familiar with these funds, as discussed above, is another means to provide information about the revolving funds.

MISSISSIPPI'S DRINKING WATER STATE REVOLVING LOAN FUND

The national DWSRF Program was established by the Safe Drinking Water Act (SDWA) Amendments of 1996.[36] Through the program, the EPA is able to make capitalization (cap) grants to states to "further the health protection objectives" of the SDWA.[37] DWSRF is intended to allow states to "provide low cost loans to public water systems to help achieve or maintain compliance with SDWA requirements."[38]

Mississippi Drinking Water Infrastructure

Much of Mississippi's drinking water infrastructure is beyond or nearing the end of its design life.[39] This aged infrastructure causes high leakage rates and affects the "systems' ability to treat, store, and deliver potable water at adequate pressure to the state's population."[40] The EPA's 2015 Drinking Water Infrastructure Needs Survey estimated that Mississippi would need $4.8 billion over the next 20 years—or $241 million annually—to finance drinking water infrastructure projects and provide safe drinking water.[41] The vast majority of this spending (slightly over $3 billion) is needed for transmission and distribution projects.[42] Unfortunately, only around $100 million, less than half of the $241 million annual demand, is consistently available for drinking water infrastructure projects.[43] The deficit is attributable, in part, to dwindling federal support for water infrastructure since the 1970s when the Clean Water Act and SDWA were enacted and federal funds were sent to cities to bring them into compliance.[44] Nationwide, the share of federal support in governments' total water utility spending has reportedly dropped from 31% in 1977 to 4% in 2017.[45] As described above, however, recent funding provided under the American Rescue Plan Act and Infrastructure Investment and Jobs Act of 2021 will increase funding available for FY2022–26.

Although there are other sources of funding for water infrastructure projects in Mississippi, [46] the DWSIRLF program provides a major source of consistent funding. Furthermore, the DWSIRLF program has a higher funding maximum than many of the other grant and loan programs.[47]

The water crisis in Jackson in early 2021 following a winter storm drew increased attention to Jackson's deteriorating water infrastructure.[48] **Figure 7** below, shows that Hinds County receives a high proportion of DWSIRLF funding and yet drinking water infrastructure challenges in Jackson remain. City officials estimate $1 billion is needed to fix Jackson's water system following the historic freeze, yet last year the EPA's Drinking Water State Revolving Fund Program totaled only $2.7 billion for the entire country.[49] These critical drinking water infrastructure problems are not isolated to Jackson. A report by the American Society of Civil Engineers gave Mississippi's drinking water infrastructure a D on an A–F scale.[50] This report, alongside EPA's 2015 cost estimate for fixing Mississippi's drinking water systems—$4.8 billion over 20 years—indicate that these infrastructure issues are widespread throughout the state.

DWSIRLF Loans

The national Drinking Water State Revolving Fund Program allows states to set the loan interest rates from 0% to market rates and set repayment periods of up to 30 years.[51] States also have

the flexibility to customize loan terms, provide incentives for projects, and award additional subsidization in the form of grants, principal forgiveness, and negative interest rate loans.[52]

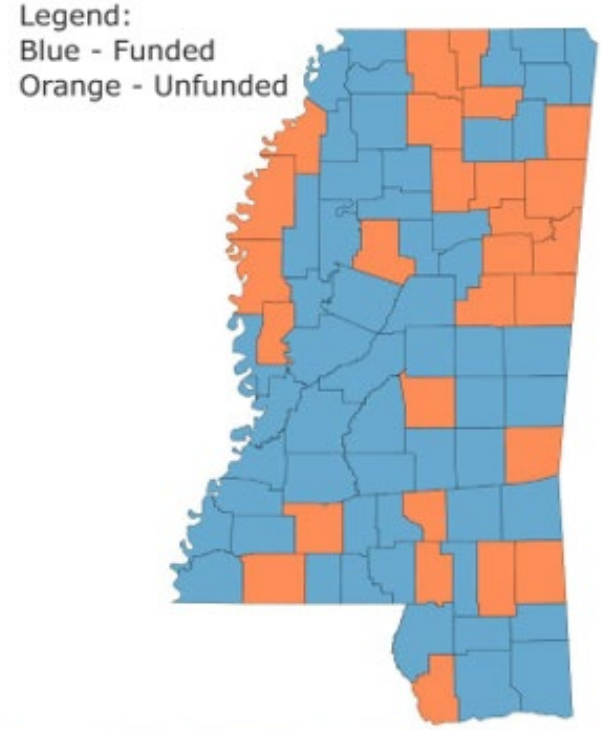
The Mississippi State Legislature established the DWSIRLF program to receive the DWSRF Federal Cap Grants and provide loans to public water infrastructure projects.[53] The loans are available to public entities and tax exempt rural water associations.[54] The maximum loan award is $5,000,000 per loan recipient, although exceptions may be granted on a case-by-case basis.[55] For FY2021, recipients were only eligible to receive one loan, although if funds were still available at the end of the year, systems could obtain an additional award or an increase in an award.[56] The DWSIRLF program loans covers 100% of the eligible project costs, minus any other sources of funding the project receives.[57] All loans have an annual interest rate of 1.95%, compounded monthly, and a maximum repayment period of 30 years, or 40 years for disadvantaged communities.[58] "After the loan is awarded, costs associated with planning, designing, and constructing the project are reimbursed to the recipient."[59] Repayment of loans is to begin within one year of the project's completion.[60] The loan cannot be used to cover expenses for operation and maintenance of the public water system.[61]

A project for which the applicant has completed all loan application requirements and is ready to proceed is placed on Mississippi's "Priority List."[62] Mississippi may rank ready applications on the basis of risk to human health, SDWA compliance, and system need.[63] In practice, Mississippi places project applications into 1 of 13 categories and then generally awards funds in rank order, with Category I projects being funded first.[64] The very highest priority projects are those needed to bring a faulty system back into compliance.[65] Projects within each category are then ranked based on the following criteria:

> (1) benefit the most people per dollar expended; (2) assist systems most in need on a per household affordability basis as required by the SDWA (3) use consolidation with other systems to correct existing deficiencies and improve management; (4) take into consideration the system's current capacity; (5) encourage participation in short-term and long-term technical assistance programs; and (6) encourage participation in the Drinking Water Needs Survey.[66]

In the case that there were not enough funds to fund the entire priority list, the more highly ranked projects would receive funding, up to the available funds. To date, no project on the Priority List has been bypassed for a funding award due to a lack of funding.[67]

Figure 3. Distribution of DWSIRLF Project Funding



Source: Data from DWSRF Annual Reports, FYs 2010–2020

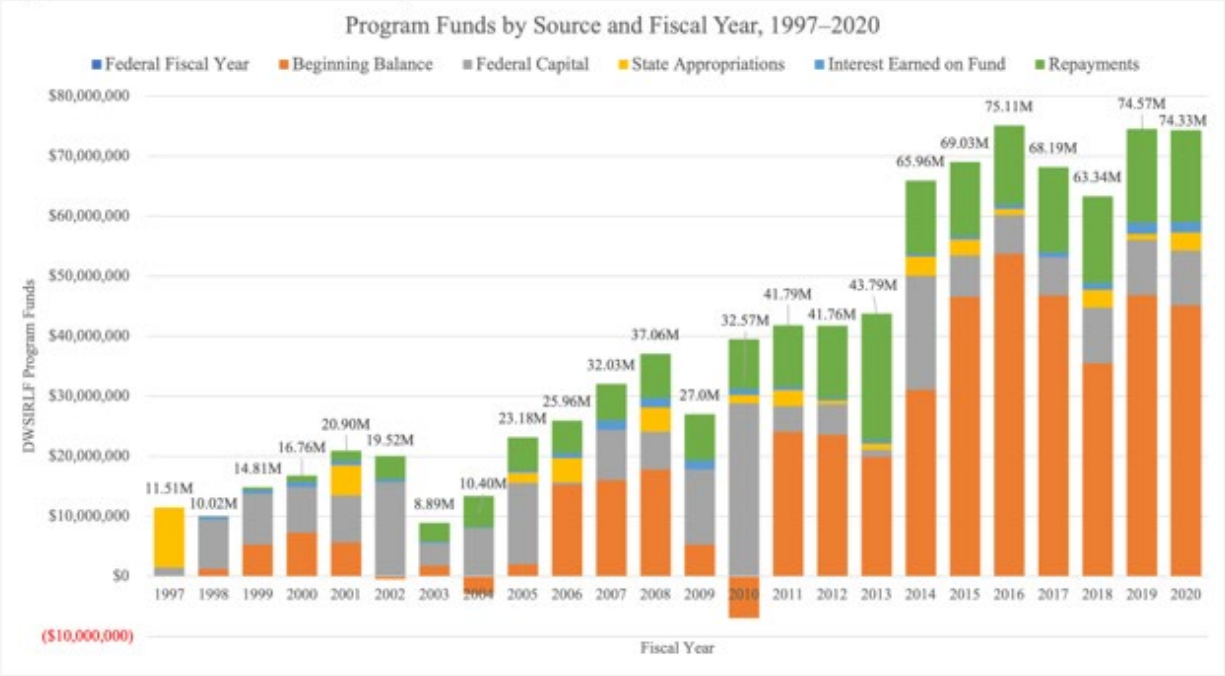
Figure 3 shows the breakdown of counties that have or have not received funding through DWSIRLF over the period FY2010–2020. Those that are labeled "funded" came from the priority list or the planning list, whereas those "unfunded" counties have not applied for or received any funding at all. Although **Figure 3** demonstrates some amount of DWSIRLF funding has reached many counties in the state, 27 counties—four of them in the Delta region—have yet to apply for any funding at all.

DWSIRLF Funding Sources

In order to be eligible to receive the Federal Cap Grants, a state must establish a revolving loan fund.[68] Mississippi created the DWSIRLF program in order to receive the Cap Grants from the EPA and provide low cost loans to public water infrastructure projects.[69] The deposited funds are then used to provide loans "to community water systems and nonprofit noncommunity water systems."[70] Through the repayment of these loans, with interest, and annual contributions from cap grants and state matching (discussed below), Mississippi is able to maintain a "perpetual" revolving fund, from which it continues to make new loans.[71]

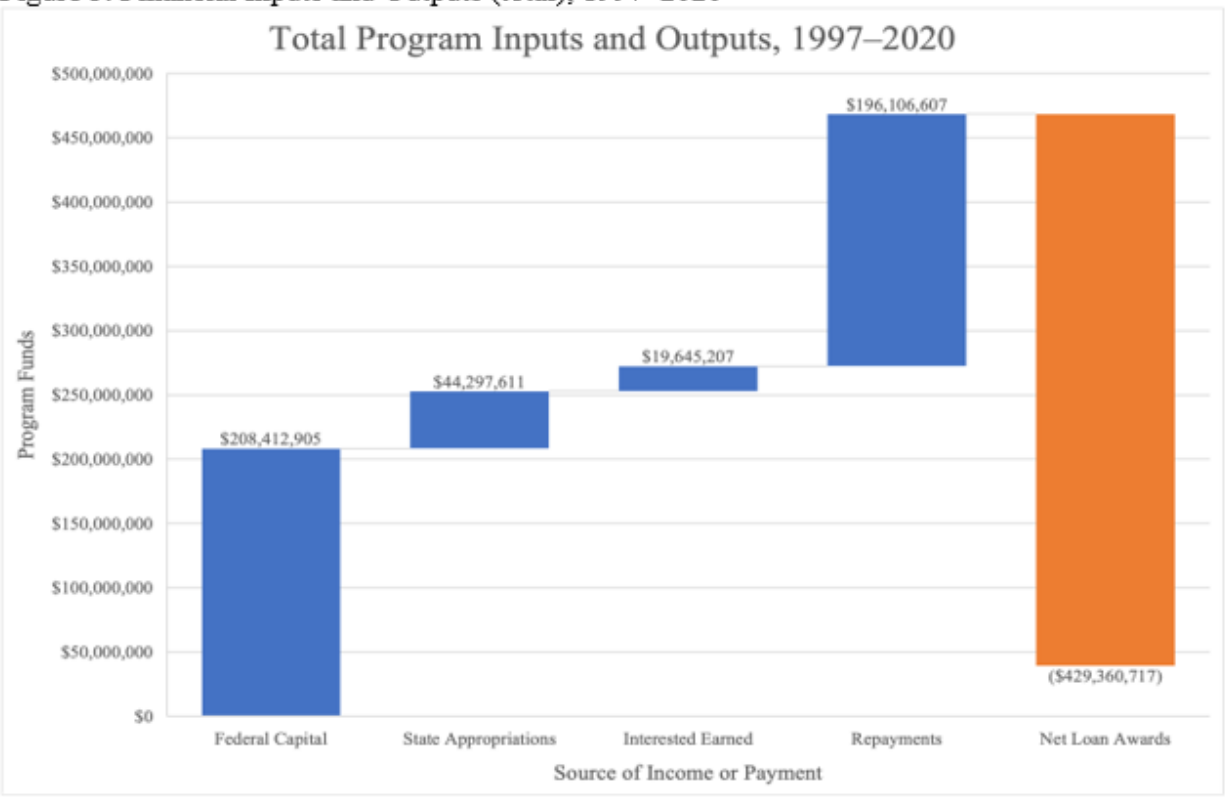
Mississippi's DWSIRLF program began in 1997 with the deposit of $10 million into the Revolving Fund, through the issuance of State General Obligation Bonds.[72] Since then, funding for the DWSIRLF program has been provided through Federal Cap Grants, state matching, interest on the deposits in the fund, repayments on loans, as well as the balance left in the fund from the previous year.[73] **Figure 4** shows how the proportion of funding from each of these sources has varied year-by-year, from 1997 to 2020. The overall funding source composition from 1997 to 2020 is shown in **Figure 5**. DWSIRLF has paid out nearly $430 million in loan funding since the program's inception, averaging $17.8 million annually.[74]

Figure 4. Breakdown of Funding Sources from 1997–2020



Source: Data from Miss. St. Dep't of Health, Drinking Water State Revolving Fund Loan Program, State of Mississippi Annual Report Federal Fiscal Year 2020

Figure 5. Financial Inputs and Outputs (total), 1997–2020



Source: Data from Miss. St. Dep't of Health, Drinking Water State Revolving Fund Loan Program, State of Mississippi Annual Report Federal Fiscal Year 2020

Allotment of the Federal Cap Grants to states is based on the EPA's Needs Survey, which is conducted every four years.[75] The EPA's sixth Drinking Water Infrastructure Needs Survey was conducted in 2015[76] and the agency initiated activities for the seventh in 2019,[77] although the final report will likely take a few years to publish. Mississippi received Federal Cap Grants of $11,957,000, $11,845,000 and $11,853,000 in 2018, 2019, and 2020, respectively.[78] These Cap Grants are available to Mississippi to obligate during the fiscal year for which the funds are authorized and the following fiscal year.[79]

States must match 20% of the federal grants.[80] This means that in addition to the money from the EPA, a state must deposit into the fund an additional amount equal to 20% of what the EPA allotted to the state. The match must be made either on or before the date on which the grant payment is made to the state.[81] Each state must document in either its Intended Use Plan or grant application/award the proportionality cash draw ratio that will be used.[82] For FY2021, Mississippi planned for a cash draw ratio of 20.48% state funds to 79.52% federal grant funds.[83]

Traditionally, Mississippi has provided the state match through the sale of state general obligation bonds.[84] From 2014 to 2016, however, the State Legislature provided direct funding for the program, which was supplemented by funds from the State Drinking Water Systems Emergency Loan Fund in order to reach the required 20%.[85] In 2018, Mississippi began to once again provide the state match by selling state general obligation bonds.[86] If a state provides a match in excess of the 20% requirement, the excess balance can be "banked" towards future state match requirements.[87] This may explain why state match for some years is equal to 0 or is below the 20% requirement (see **Figure 4**).[88] Mississippi provided matching funds of $1,000,000 and $3,000,000 in 2019 and 2020, respectively.[89]

Special Terms for Certain Communities

Mississippi has special funding opportunities available for disadvantaged communities. Authorized under America's Water Infrastructure Act of 2018 (AWIA), disadvantaged communities are eligible for loans with 40 year repayment terms, 10 years longer than current maximum for other borrowers.[90] AWAI also requires that "additional subsidy for state-defined Disadvantaged Communities must be between 6% and 35%" of the Federal Cap Grant."[91] Congress has frequently increased the percentage reserved for subsidization through the appropriations process, resulting in a 20% to 49% set-aside for subsidies from the Federal Cap Grant for FY 2021.[92] Subsidization may be provided by "a negative interest rate, Principal Forgiveness (PF), or a combination of the two."[93] Mississippi will only award PF using Federal funds.[94]

The amount of PF for which a potential loan recipient (LR) may be eligible is calculated by comparing, as a percentage, the potential LR's median household income (MHI) with the median household income across the state of Mississippi.[95] The amount of subsidy is outlined in Table 1.

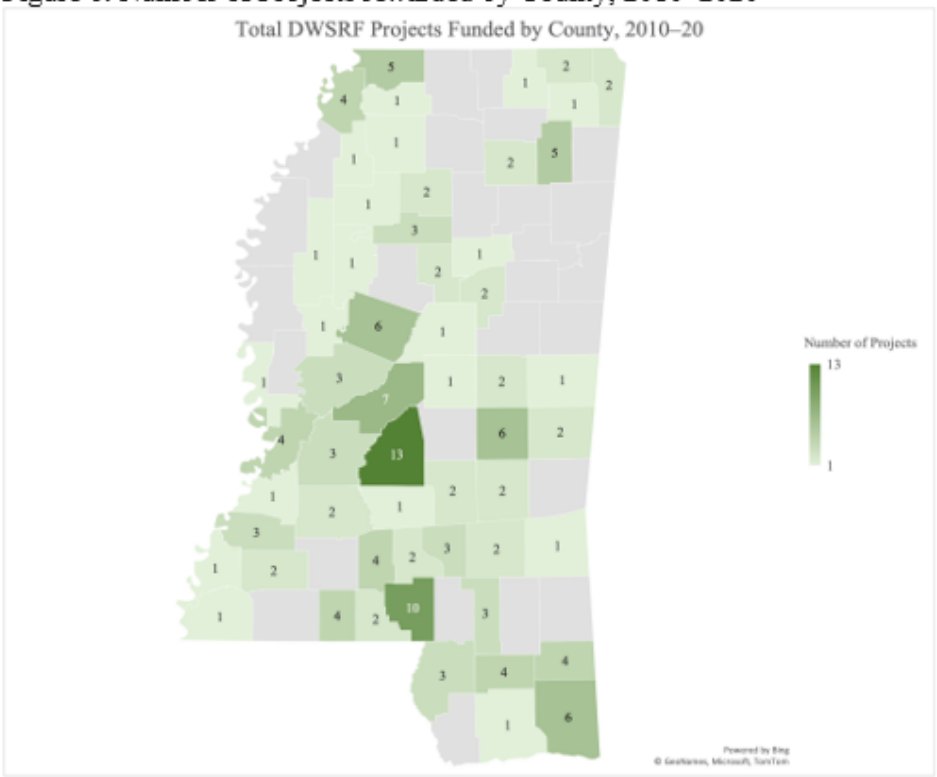
Table 2. Loan Principal Forgiveness Based on Median Household Income

Loan Recipient Median Household Income Threshold	Principal Forgiveness (%)
90% < LR MHI < 100%	15
80% < LR MHI < 90%	25
70% < LR MHI <80%	35
LR MHI < 70%	45

Source: Miss. St. Dep't of Health, Drinking Water State Revolving Fund Loan Program, State of Mississippi Annual Report Federal Fiscal Year 2020

The State Board sets a limit of $500,000 on the subsidy (PF) for a single loan (i.e., the amount that one recipient is getting for a project).[96] Once that limit is hit, only regular loan funds, with standard terms, are available to support the project. The Board's rationale in setting this limit was "to ensure that the assistance is dispersed as far as possible[.]"[97] Therefore, an entity would be eligible for less PF than the percentages outlined above if it took out a larger loan and the percentage amount is greater than $500,000.[98] For example, in 2019, the City of Jackson and City of Grenada received awards of $12,903,093 and $11,500,000 respectively and were each eligible for the maximum $500,000 in PF.[99] A review of Annual Records shows that each year, Mississippi awards loans that exceed $3.3 million, such that $500,000 in PF would not cover even 15% of the total loan award (the lowest PF level).[100] Just twenty-six of 153 projects—just less than 17%—have been awarded funding at or below the PF cap between 2010 and 2020.[101] The PF cap thus may be preventing Mississippi from supporting low-income communities with larger scale projects and deterring such applicants.[102]

Figure 6. Number of Projects Awarded by County, 2010–2020

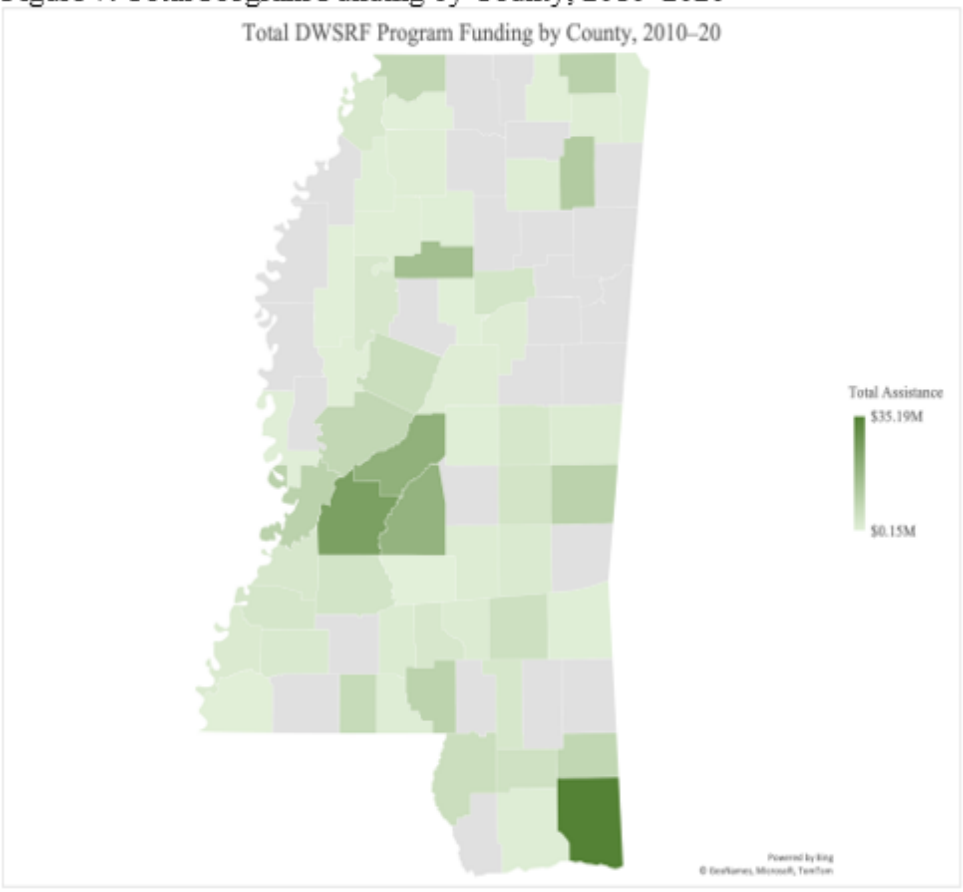


Source: Data from DWSIRLF Annual Reports, FYs 2010–2020

Fund Distribution

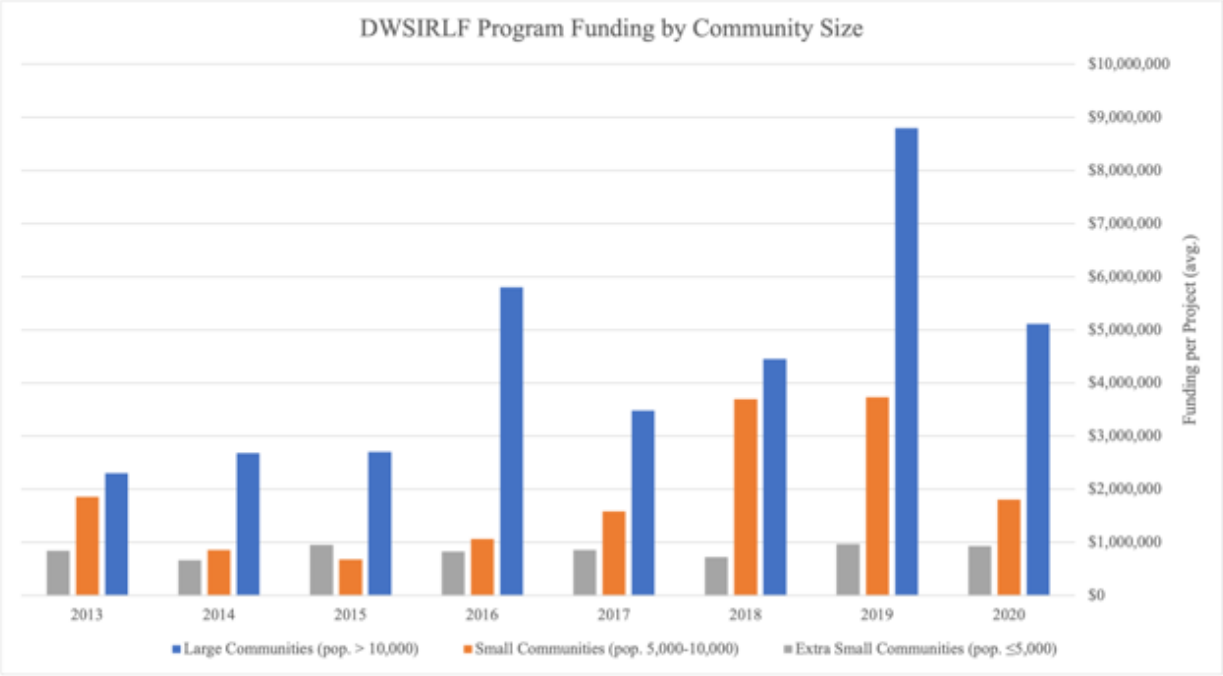
Although drinking water infrastructure issues are common across Mississippi,[103] DWSIRLF funds, in particular, are not reaching communities in the Delta. Our research team's analysis found that the majority of Mississippi's drinking water infrastructure projects are concentrated in a handful of counties in the southern half of the state (see **Figure 6**). The greatest gaps are on the northwestern and northeastern borders of the state. Not only are the projects concentrated in the south by number, but the highest awards also tend to go to projects in the southern and southeastern portions of the state (see **Figure 7**). Counties in the Delta are either not receiving funding or are receiving lesser amounts relative to other parts of the state. Additionally, the analysis showed that a greater proportion of program funds flow toward larger communities (see **Figure 8**).

Figure 7. Total Program Funding by County, 2010–2020



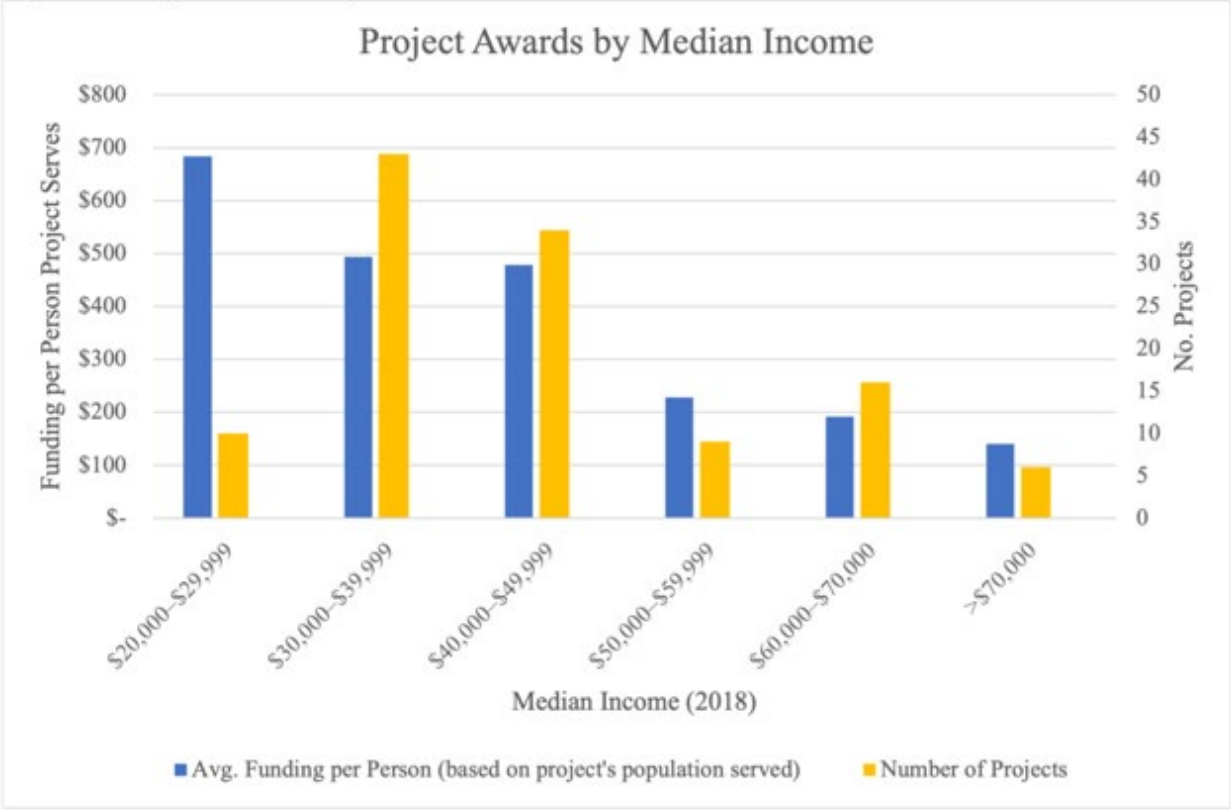
Source: Data from DWSIRLF Annual Reports, FYs 2010–2020

Figure 8. DWSIRLF Program Funding based on Community Population



Source: Data from DWSIRLF Annual Reports, 2013–2020 (community size data reporting began in 2013)

Figure 9. Project Awards by Median Income

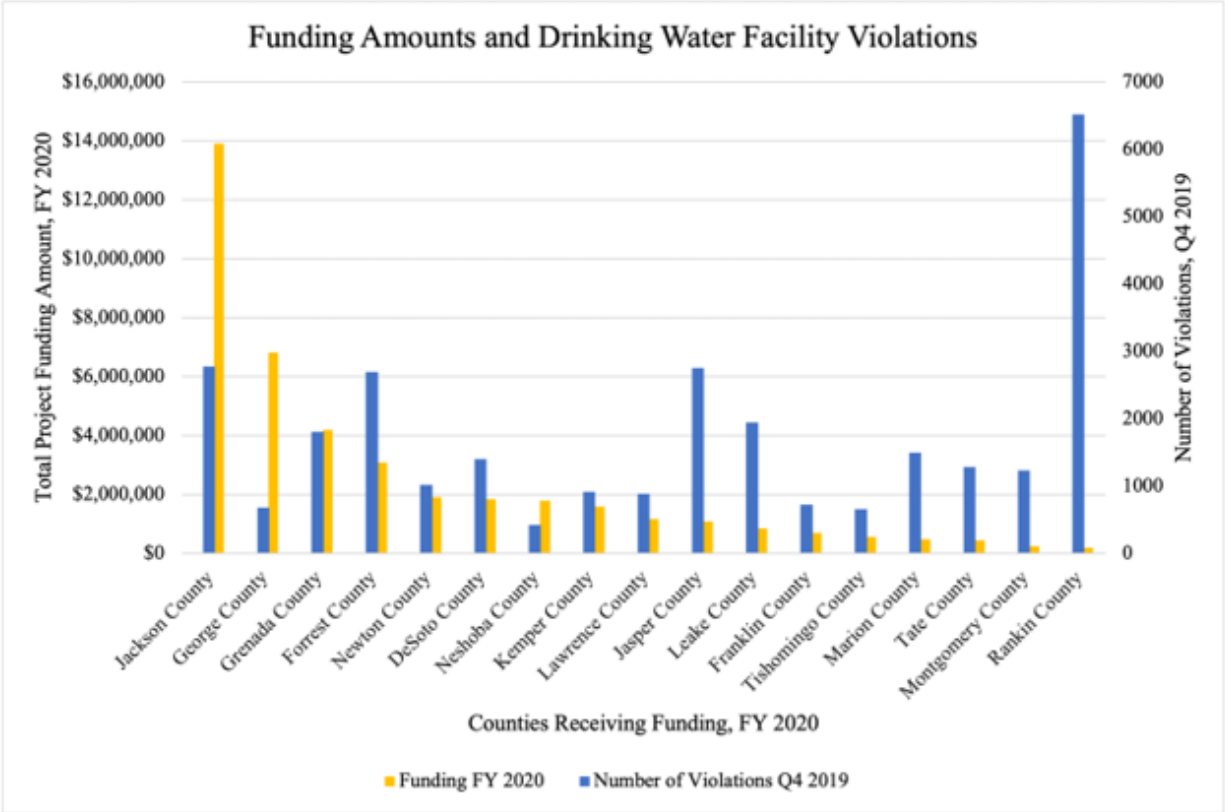


Source: Data from DWSIRLF Annual Reports, FYs 2013–2020

Beginning in 2013 the DWSIRLF Funding Annual Reports began reporting income levels of the population served for each project. To create **Figure 9**, Project Awards by Median Income, the average funding per person was calculated using the project award divided by population served by that project. As **Figure 9** shows, several projects have directed a great amount of funding to those with median incomes at the lower range ($20,000–$29,999). Most projects serve populations in the $30,000–$49,999 income range. Holmes County and Issaquena County account for the high average funding per person served in the lowest median income range. Only four counties—Holmes, Issaquena, Jefferson, and Wilkinson counties—have received funding in this income range.[104]

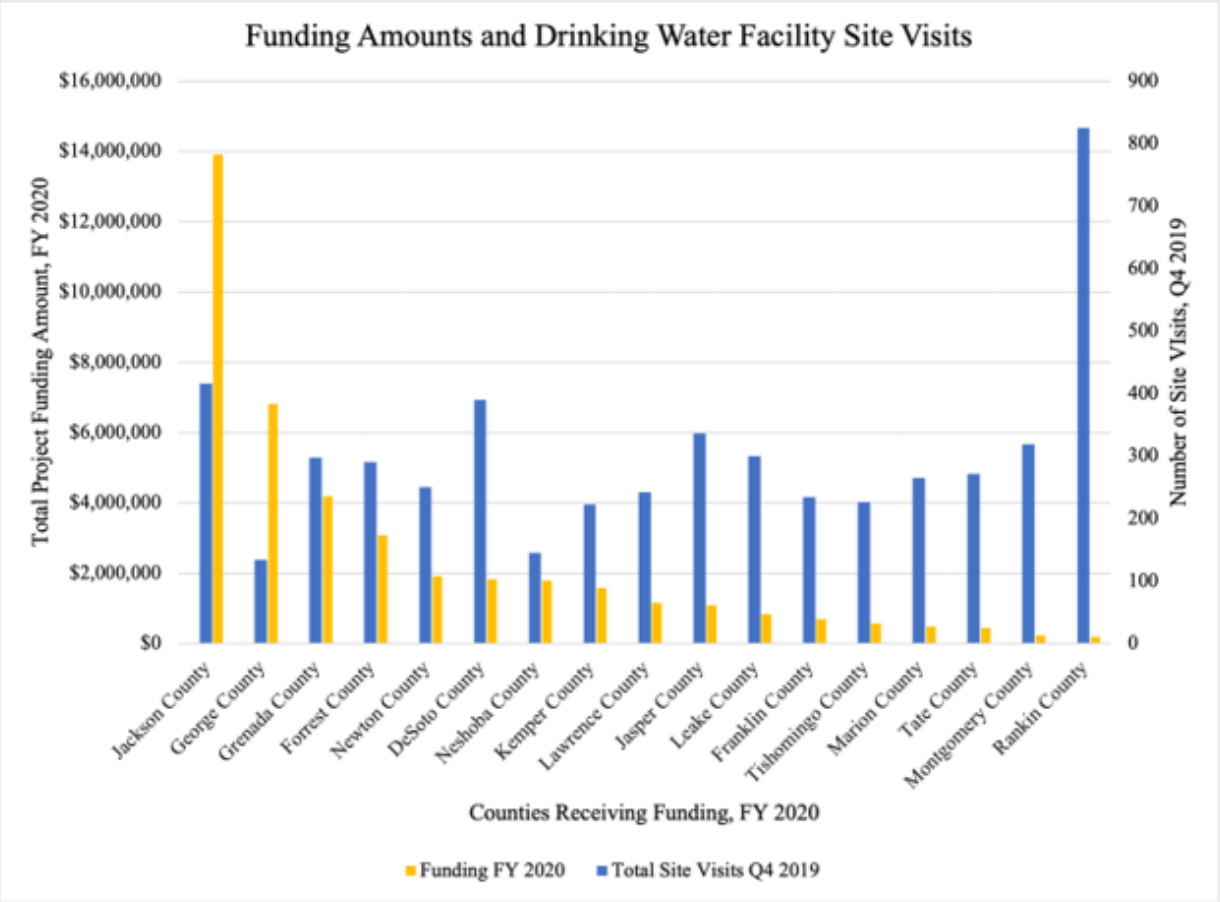
To bolster the conclusion that funding is not necessarily being directed to the areas with the greatest need, funding in 2020 did not align with violations reported in the Safe Drinking Water Information System (SDWIS). In other words, funding awards do not seem to be responsive to drinking water facility violations, where counties are in need of funding to fix these problems. **Figure 10** and **Figure 11** below show differences in funding and drinking water facility violations and site visits, respectively.

Figure 10. Funding Amounts and Drinking Water Facility Violations



Source: Safe Drinking Water Information System (SDWIS) Federal Reporting Services, Ent'l Prot. Agency; Miss. St. Dep't of Health, Drinking Water State Revolving Fund Loan Program, State of Mississippi Annual Report Federal Fiscal Year 2020

Figure 11. Funding Amounts and Drinking Water Facility Site Visits



Source: Safe Drinking Water Information System (SDWIS) Federal Reporting Services, Ent'l Prot. Agency; Miss. St. Dep't of Health, Drinking Water State Revolving Fund Loan Program, State of Mississippi Annual Report Federal

In 2020, Rankin County received the lowest amount of total funding, $190,000, but had the highest number of total violations and site visits. Jackson County, which received the greatest funding amount in 2020, had the second-most violations and site visits. Additional research could more thoroughly explore whether there is a correlation between site visits or violations in one year and applications for project funding in subsequent years.

Emergency Loan Fund

The primary purpose of the DWSIRLF program is to provide loans to public water systems, so as to protect public health and bring these systems into compliance with the SDWA.[105] Mississippi also has a Drinking Water Systems *Emergency* Revolving Loan Fund Program, an entirely state-funded loan program that seeks to save time and expense by providing a ready funding source, rather than the intensive process of applying for DWSIRLF funding.[106] This fund can come in handy when, for example, a water system is found to have SDWA compliance issues in November or December, after the DWSIRLF program application deadline (typically September) has already passed. The Emergency Fund functions as a temporary fix for water system compliance issues as the potential loan recipient goes through the process of applying for DWSIRLF funding.

The Emergency Fund may not, however, be an attractive solution to low-income communities. Since the Emergency Fund is 100% state-funded and a product of Mississippi law, its loans are ineligible for subsidization. Loans from the Emergency Fund also have a 2% interest rate and must be repaid within just 5 years,[107] making these loans unaffordable for smaller systems. These terms may make communities reluctant to take out significant loans from the Emergency Fund, thus keeping water systems from addressing a problem until it receives a DWSIRLF loan.

As described in **Part III**, Overview of Analysis & Barriers to Funding Access, there are several policy changes Mississippi could enact to make funding more accessible to low-income communities. One suggestion that came up in our interviews is that Mississippi could reserve some of the DWSIRLF funds for emergency projects to address compliance issues flagged after the application deadline and throughout the year.

MISSISSIPPI'S WATER POLLUTION CONTROL REVOLVING LOAN FUND

Congress established the Clean Water State Revolving Fund through the 1987 amendments to the Clean Water Act.[108] The Water Pollution Control Revolving Loan Fund (WPCRLF) is the program that Mississippi established to disburse funds from the federal program and is a key funding source for communities in addressing wastewater.[109]

Mississippi Wastewater Infrastructure

Mississippi's wastewater infrastructure faces serious challenges, as its "D" grade from the Mississippi Section of the American Society of Civil Engineers indicates.[110] Much like Mississippi's drinking water systems, the state's wastewater treatment systems may be nearing the end of their lifespan.[111] Over the past five years, the state's Department of Environmental Quality issued 2,175 notices of violation for wastewater treatment plants.[112] Many systems work adequately in dry conditions, but "increasingly frequent and severe wet weather events" push systems to their limit, exposing structural deficiencies.[113] Most communities cannot pay for system upgrades by raising rates alone (or at all) and grant funding is very competitive; therefore, federal loan funding is necessary for communities to address wastewater systems.[114]

WPCRLF Loans

WPCRLF loans are available to public entities authorized under State law to own and operate wastewater facilities.[115] These loans are used to fund "construction of eligible wastewater treatment and transportation facilities, non-point source and storm water pollution control programs, and estuary conservation and management programs."[116]

WPCRLF loans are available at interest rates of 0.8% compounded monthly for 20-year loans.[117] If the projected useful life of the project is at least 30 years, loans are available at an interest rate of 1.8% compounded monthly for 30-years.[118] Loans cover all allowable project costs, including costs incurred during the application process such as hiring engineers.[119] As with DWSIRLF, loans cannot be used to cover expenses for operation and maintenance of public water systems.[120]

There is no cap on the maximum loan award an eligible applicant may receive.[121] Applicants may submit funding applications for multiple projects within the same year.[122]

Each year, the Mississippi Department of Environmental Quality (MDEQ) publishes a "Priority List," which lists the projects that will receive funding in a given year. Projects are ranked on one of three different Priority Lists. The Small/Low Income Communities Priority List is for applicants which serve a population of 4,000 or less with a median household income of $40,000 or less.[123] In 2020, MDEQ set aside $18.4 million for qualifying projects on this list.[124] Any of the $18.4 million not obligated to small/low income community projects would then be released to fund projects on the Green Project List or Regular List.[125] The Green Project Reserve Priority List is for projects where at least 25% of the scope of the project qualifies as "green."[126] This list is used to ensure that "green projects" will not have to compete with "regular" projects for funding.[127] In 2020, MDEQ set aside $9.5 million to fund "green projects," with leftover funds available to any other loan recipient.[128]

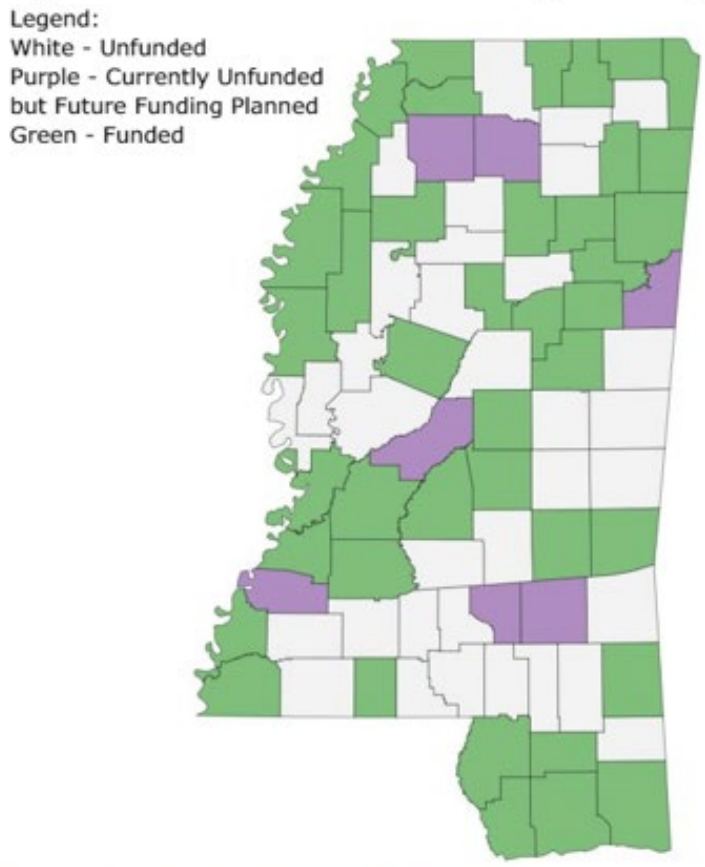
All other projects are placed on the Regular Priority List.[129] The Priority System gives preference to projects that "will bring existing wastewater facilities into compliance with their final discharge limitations, as required by the federal Clean Water Act."[130] From there, funding is awarded based on environmental importance, and as determined by 12 categories within the priority system.[131] According to officials at MDEQ, for the past 15 years MDEQ has been able to fund every project that became ready for loan award during any given fiscal year.

MDEQ also publishes a "Planning List," which lists projects that are almost ready to receive funding except for the completion of some final step of their application, such as the submission of a facilities plan.[132] According to people with knowledge of the program, applicants for projects on the planning list are often holding off on finalizing their applications while they consider whether to take on a loan.

MDEQ also sets aside a Loan Increase Reserve, in order to cover construction expenses and allow the project to be finished, in case a project goes over the anticipated cost.[133] In 2020, MDEQ set aside $5 million.[134] If the need for loan increases exceeds the funds available in the Loan Increase Reserve, MDEQ may recover funds from loan decreases or other sources.[135] In 2020, MDEQ also reserved $600,000 for increasing subsidies to subsidy-eligible projects funded prior to 2020.[136]

Figure 12 below demonstrates the distribution of funding in terms of funded and unfunded counties. There are 34 counties who have not received any WPCRLF loans and do not belong to the planning list. Although many counties in the Delta have received WPCRLF funding, there remain critical gaps in the region—and throughout the state of Mississippi—where counties and cities have not applied for any amount of funding.

Figure 12. Distribution of WPCRLF Project Funding



Source: Data from WPCRLF IUPs, 2013–2020

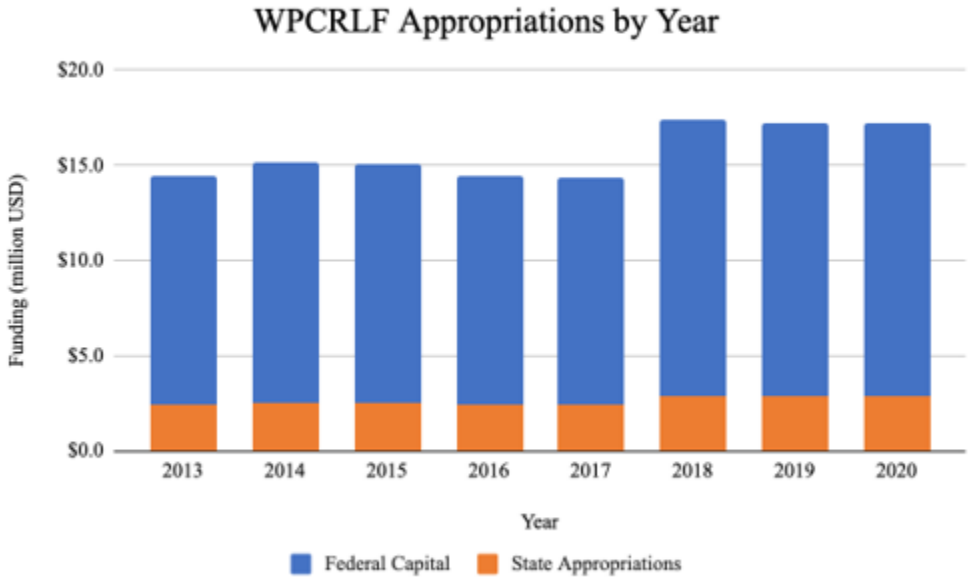
WPCRLF Funding Sources

As a revolving loan fund, the WPCRLF, like the DWSIRLF, is designed to fund new projects in perpetuity.[137] Loan payments, including interest, go back into the fund to support new projects.[138] Additionally, annual state appropriations and Federal Cap Grants fund the WPCRLF.[139] Mississippi applies to receive a Federal Cap Grant by submitting its intended use plan, which includes projects on the state's Priority List,[140] and then Mississippi must match 20% of the amount of money received from EPA.[141] **Figure 13** shows the amount of new funding injected into the WPCRLF from these two sources since 2013.

When the EPA awards Mississippi a Cap Grant, the state can schedule to pay its 20% match at some point in the future. Mississippi generally schedules match payments within two years of the grant's being awarded. For example, in 2016, the state scheduled all of its match payment for the fourth quarter of 2018.[142] Sometimes, however, this time horizon is shorter; in 2020, the state scheduled $37,443 for match payment in that same year, and then scheduled $2.83 million for payment in the first quarter of 2021.[143] The payment date is significant because the money from the Cap Grant cannot actually be used until the state has disbursed its match payment into the program.[144] When the state disburses its 20% match payment, it can "draw down" five times that amount of money from the cap grant.[145]

Mississippi normally provides its 20% state match through direct appropriation, state general obligation bonds, or interest earnings on state match deposits.[146] For example, the 2019 regular legislative session authorized $7.94 million in bonds in order to provide the state match for the

Figure 13. WPCRLF Appropriations by Year



Source: Data from WPCRLF IUPs, 2013–2020

remainder of the FY2017 capitalization grant, the entire FY2018 and FY2019 capitalization grant, and a small part of the FY2020 capitalization grant. Proceeds from the sale of these bonds were deposited into the WPCRLF during the first quarter of FY2020.[147] The 2020 regular legislative session authorized $2.83 million in bonds, which will match the remainder of the FY2020 capitalization grant.[148]

Special Terms for Certain Communities

Much like with the DWSIRLF program, Mississippi provides subsidies to certain low-income rural communities through principal forgiveness, as contemplated under the Federal Water Pollution Control Act.[149] Federal Cap Grants are critical because they allow Mississippi greater ability to subsidize projects through principal forgiveness without jeopardizing the perpetual nature of the fund.[150]

Projects on the Small/Low Income Communities List serve communities with a population of 4,000 people or less and a median household income of $40,000 or less. Those projects are eligible for principal forgiveness of a maximum of 75% of their loan amount requested, provided that amount does not exceed $2 million.[151] These communities are also on a separate priority list so that they do not have to compete with larger service areas for funding.[152] The ranking criteria on this list also differs from the main list: towns are awarded "subsidy points" for declining population, rising unemployment rates, and/or being identified as an "economically distressed area."[153] In 2020, Mississippi set aside $18.4 million in available funds for qualifying projects in small/low-income communities, and reserved an additional $600,000 for subsidy increases.[154] Despite this set-aside, Mississippi listed only one project in the "Small/Low Income" in its 2020 IUP: the town of Tutwiler, with a population of 3,488 and median household income of $29,681,

applied for a $6.7 million loan to renovate its wastewater treatment facility and improve its wastewater transportation system.[155] Other communities with projects on the Planning List would also be eligible for subsidization, but had not yet finalized their applications.[156]

According Mississippi stakeholders we spoke with, community reluctance to move forward with a project is partially attributable to a concern with signing onto a loan without assurance of a certain amount of principal forgiveness. This kind of subsidy is especially important for rural communities because they do not have the tax base that a larger, more densely-populated municipality might have. Debt owed to other entities may also deter participation,[157] while existing loans in arrears or other loan agreement violations will generally disqualify the applicant.[158] If an applicant is delinquent on a previous WPCRLF loan, the applicant will not be eligible for a new WPCRLF loan until they get caught up on the delinquent loan. The regulations do not specify if delinquency on a non-WPRCLF loan will disqualify the applicant, however, such delinquency will raise red flags for the application. Applicants should consult with MDEQ on how delinquent non-WPCRLF loans could affect their eligibility.

The total amount of loan funding and forgiveness requested by rural communities is a small portion of the total amount of funding the program disburses annually. For instance, there were five projects for facilities not meeting Clean Water Act effluent limits that were eligible for the Small/Low Income Subsidy on the WPCRLF 2020 Planning List, meaning that these towns were likely ready to apply except for some final formality such as the submission of a facilities plan.[159] These five projects covered three communities (the town of Coldwater had three projects on the list).[160] Altogether, these projects would have requested $8.7 million and would have been eligible for $4.2 million of principal forgiveness, had they all moved forward in the same year.[161] All of these projects would have received funding if they had completed their applications; as projects for small/low-income communities with water systems not meeting Clean Water Act limits, they would have been at the top of the 2020 priority list. Although we cannot say with certainty whether these towns would have received forgiveness, all qualified for forgiveness and there was money in the program that could provide it. If every subsidy-eligible project on the Planning List had finalized their application, the total forgiveness amount would have been $8.375 million, well within the program's $104.8 million balance carried over from 2019 and under the $14.3 million Federal Cap Grant for 2020.[162]

Fund Distribution

Our research team sought to identify community characteristics associated with receiving or not receiving funds from WPCRLF. This analysis focuses on income and demographic data across counties receiving project funding from 2011 to 2020.[163] In that time, 149 projects were funded in total across 39 counties. Forty-one counties did not apply for funding between 2011 and 2020. Even though agencies at the sub-county level often apply for and receive funding, we completed our analysis at the county level to consistently analyze additional factors that were only available at the county level.

First, we compared data between counties on the Priority List that received WPCRLF funding and counties that did not receive funding, either because their projects remained on the Planning List or because they did not apply for funding. Some counties have projects that were placed on the Priority List and received funding, while some of their other projects have remained on the Planning List. These counties were included in the list of "Funded Counties" for the sake of this analysis.

Table 3 compares average economic, demographic, and additional factors between counties that had projects funded from the WPCRLF.[164] Many of the factors, listed in the table below, were similar for both funded and unfunded counties, though highlighted cells present potentially meaningful differences. The most significant difference was in "Number of People within FEMA Flood Hazard Area (2011)," with funded counties on average having approximately 2,800 more people living within FEMA Flood Hazard Area compared to unfunded counties. Perhaps funded counties have a higher population on average, or perhaps they are more likely to apply for the WPCRF if they experience more flooding.

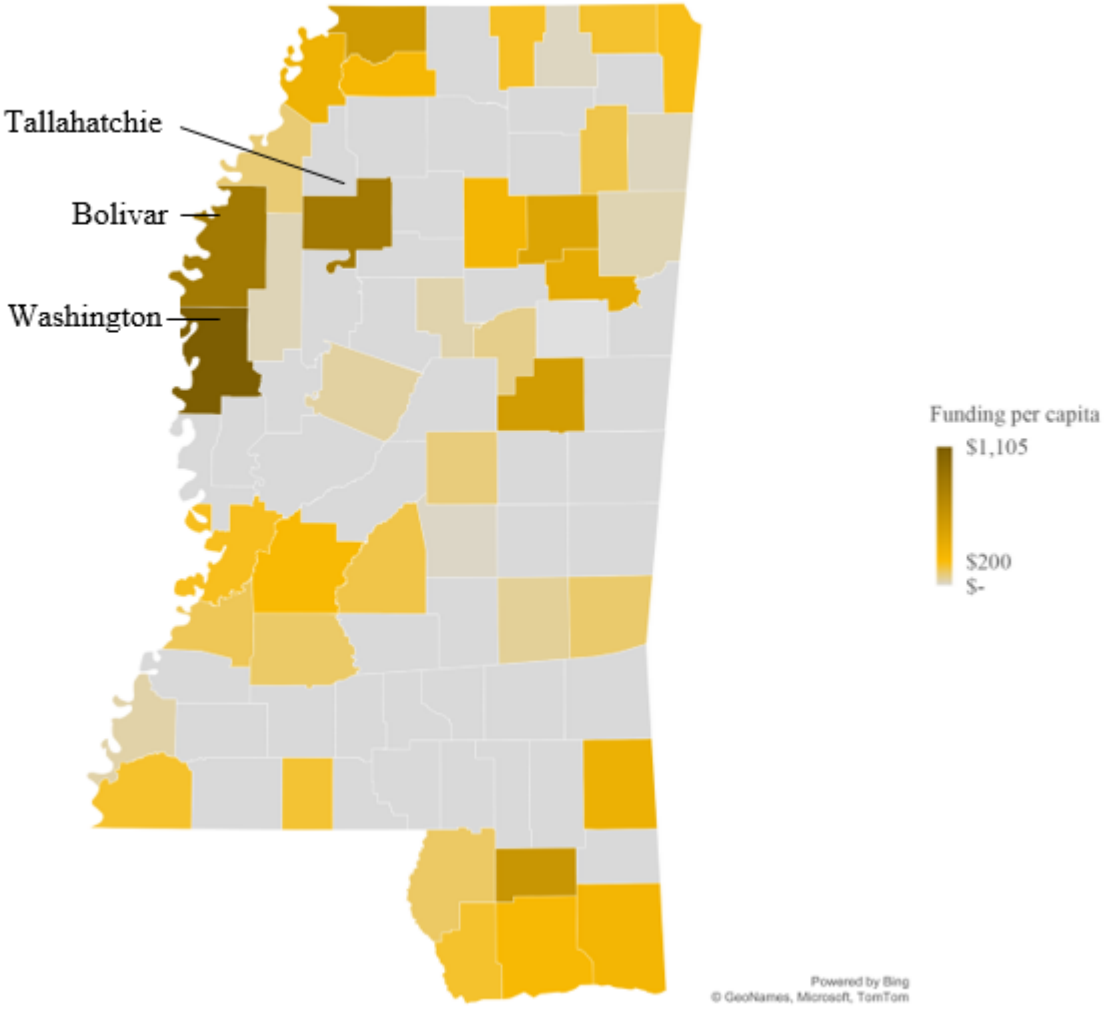
Table 3. Economic, demographic, and social characteristics of applicants on the priority and WPCRLF planning lists.

	Funded Counties (Avg.) (Priority List Counties)	Unfunded Counties (Avg.) (either on Planning List or have not applied for funding)
2018 Median Income	$40,464.83	$39,425.95
White (2019)	55.1%	56.41%
Black (2019)	42.44%	40.85%
American Indian/Alaska Native (2019)	0.56%	0.96%
Asian (2019)	0.71%	0.67%
Other (2019)	1.20%	1.13%
Hispanic/Latino (2019)	3.25%	2.45%
Number of People within FEMA Flood Hazard Area (2011)	4814.35	1987.88
ATSDR Social Vulnerability Index – People of Color/Language Percentile (2016)	0.61	0.55
ATSDR Social Vulnerability Index - Housing/Transportation Percentile (2016)	0.67	0.64

Source: Data from National Environmental Public Health (EPH) Data Explorer, Ctr. for Disease Control & Prevention, applied to counties applying for funding as listed in WPCRLF IUPS.

Figure 14 demonstrates the breakdown of funding per capita for WPCRLF. There seems to be relatively high per-capita concentration of funding in counties in the Delta, with Washington, Bolivar, and Tallahatchie Counties all at the highest end of the funding-per-capita range. In Washington County's case, $48.5 million total was awarded to five projects, four of which were awarded to the City of Greenville. Greenville is Mississippi's 9th largest city,[165] which received by far the most funding per person. Seven of the ten projects in Bolivar County qualify in the small/low-income category. Tallahatchie's $11.6 million has been awarded across just two projects, both to the Town of Tutwiler, a community of around 3,400.[166]

Figure 14. Project Funding per Capita by County, 2011–2020

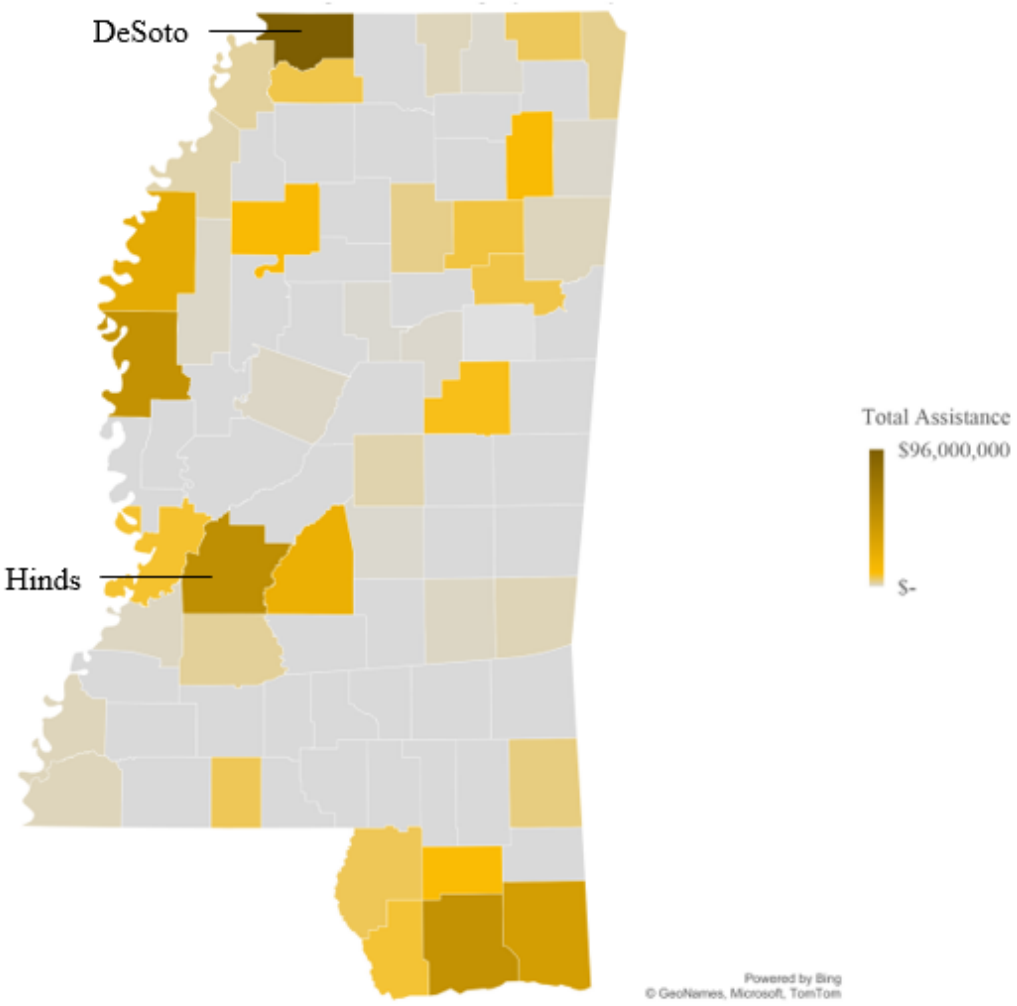


Source: Data from WPCRLF IUPs, 2011–2020

When looking to total county funding, the map displays a more even spread among those counties that received funding, although the distribution in **Figure 15** highlights how many counties have not been awarded any funding in the program. The county at the highest end of the range, DeSoto, has been awarded a cumulative total of $96 million, which nearly doubles that of the second highest awarded Hinds County, which has received $51.5 million through 2020.

DeSoto had the greatest amount of total funding, which was disproportionately higher than its funding per person. DeSoto County is part of the Memphis, Tennessee metropolitan area, and so relative population density might explain both the greater need in the county and lower the funding per capita.

Figure 15. Project Funding by County, 2011–2020



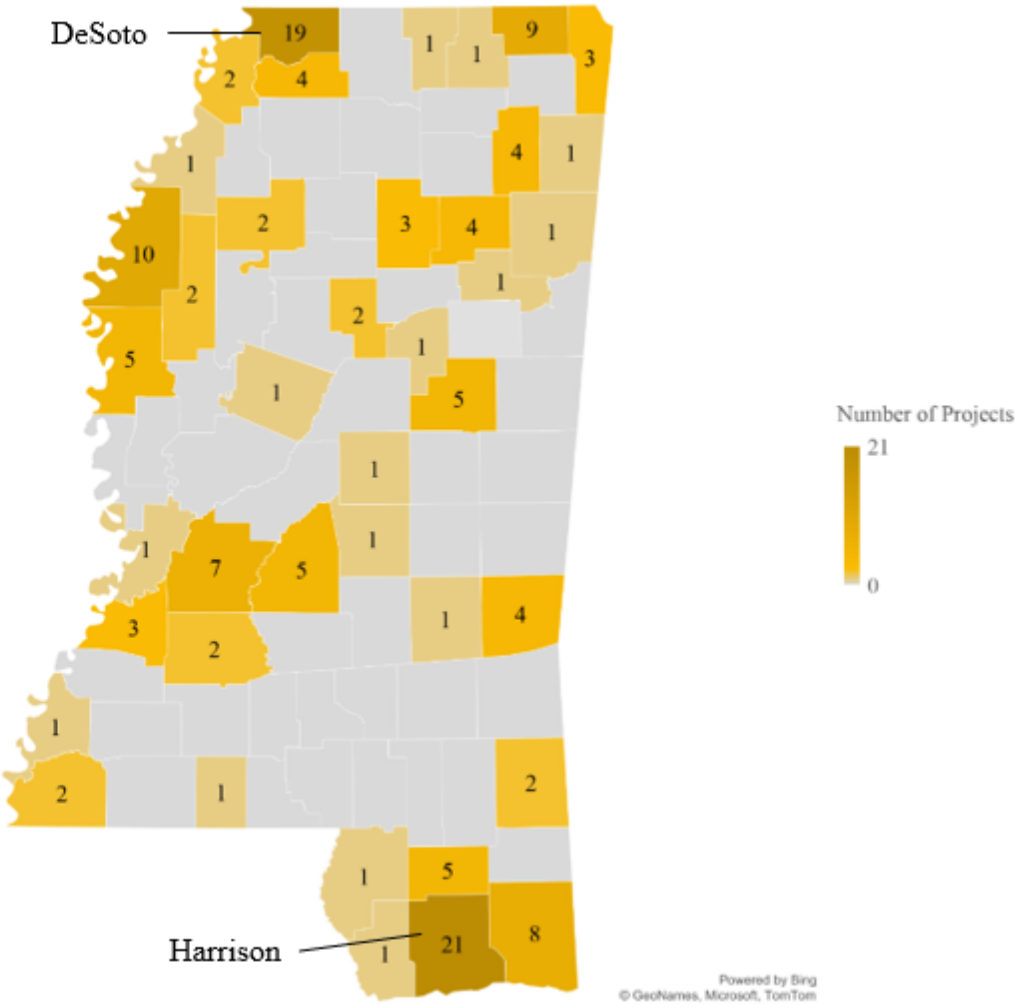
Source: Data from WPCRLF IUPs, 2011–2020

DeSoto County also ranks among the top counties for number of projects awarded in the time span analyzed, though Harrison County has been awarded the most. Harrison County is home to Biloxi, Mississippi's fourth-largest city,[167] but the City of Biloxi has been awarded just three of the county's projects for a total of $8.5 million. The remaining eighteen projects, totaling $39.5 million, have been awarded to the Harrison County Utility Authority, which services the cities of Biloxi, D'Iberville, Gulfport, Long Beach, and Pass Christian.[168] HCUA has twenty-one additional

projects on the Planning List for 2021 and after, totaling $46.9 million in additional requested funding.

Figure 16 also shows that forty-seven projects in total have made it into counties in the Delta region, out of a total of 149 projects funded in the time span we analyzed. However, many of the Delta counties have yet to be awarded any project funding at all. As mentioned elsewhere, the data also does not represent any nuances within a county's borders as to how the funding might be dispersed among the various municipalities and communities within the region.

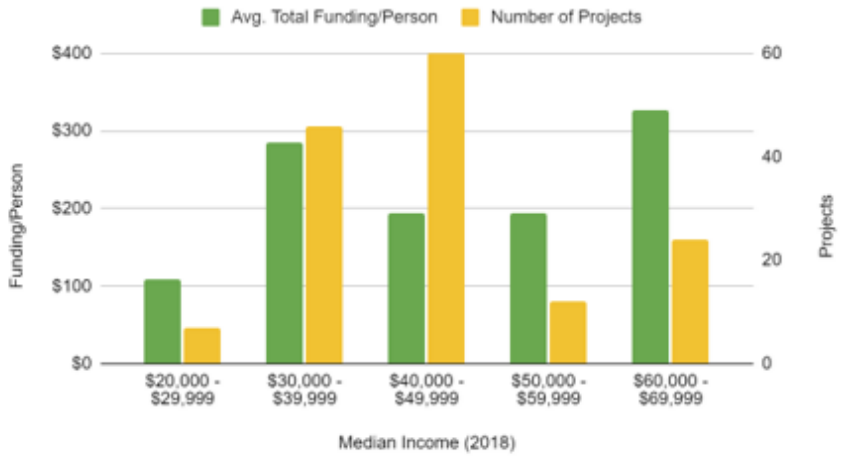
Figure 16. Number of Projects Funded by County, 2011–2020



Source: Data from WPCRLF IUPs, 2011–2020

Our research team analyzed economic and demographic trends among counties that received funding over the 10-year period of inquiry. Per capita project funding tended to be higher in counties with a higher percentage of people of color or a higher Language Social Vulnerability Index. However, outliers such as DeSoto County, which received more grants than any other county may have skewed the data in some areas.

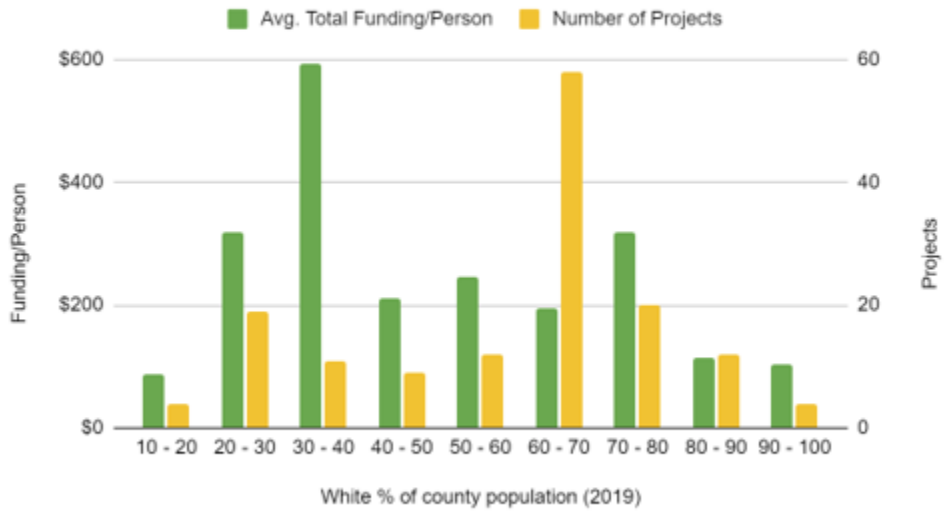
Figure 17. Awards by Median Income



Source: Data from WPCRLF IUPs, 2011–2020

When analyzed by county median income, no clear funding trend appeared in the data. Counties with the lowest median income ($20,000-29,999) received the least funding per person, and those with the highest median income ($60,000-69,999) received the most funding per person. The former category contains data from seven projects split between four counties. The latter category contains data from 24 projects split between only two counties: DeSoto and Rankin. DeSoto County Regional Utility Authority (DCRUA) obtained grants every year between 2011 and 2014 and again in 2019 and 2020. Rankin County rivals DeSoto County in population as the fourth-largest county by population in Mississippi (DeSoto County is third). The population of these two counties and the large number of projects for which they apply may explain why the highest income bracket has higher funding per person than other brackets. However, the need for funding that comes with a large population does not necessarily correlate with a greater amount of funding per person; the two most populous counties in Mississippi (Hinds County and Harrison County) fall into the $40,000-$49,999 category for median income, which had lower per capita funding on average.

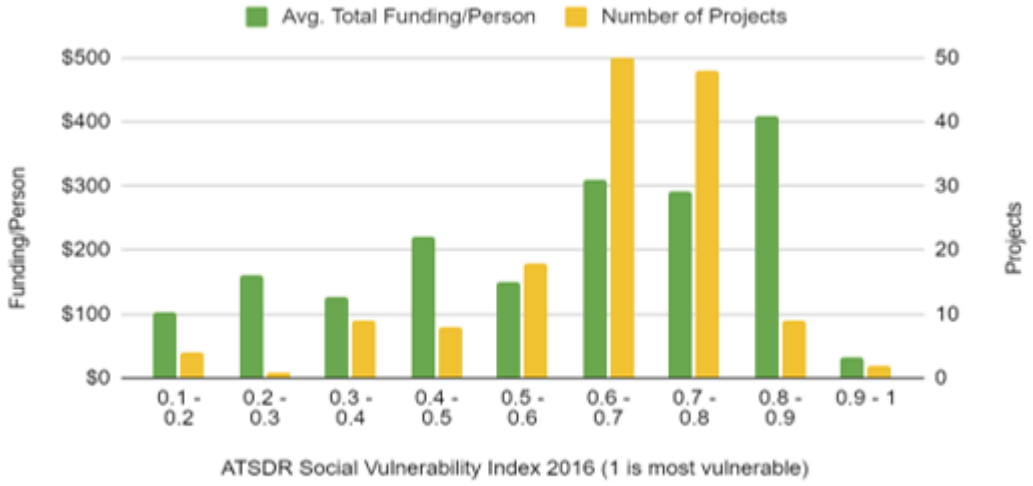
Figure 18. Project Funding by White % of County Population



Source: Data from WPCRLF IUPs, 2011–2020, and National Environmental Public Health (EPH) Data Explorer, Ctr. for Disease Control & Prevention

As **Figure 18** shows, our analysis indicates that the average total funding per person is higher for counties with a higher percentage of people of color. DeSoto County's population is 66.4% white,[169] likely skewing the 60-70% category, since that county has the highest number of projects. It is unclear what accounts for the high average total funding per person for counties that are 30-40% white. Hinds, Washington, and Harrison Counties, which have the next-highest total funding behind DeSoto, have populations which are 25.1%, 25.8%, and 67.8% white, respectively.[170] Finally, project funding per person, and total number of projects, tended to be higher in counties with a higher Language Social Vulnerability Index, as shown in **Figure 19**, below.

Figure 19. Project Funding by People of Color/Language Social Vulnerability Index



Source: Data from WPCRLF IUPs, 2011–2020, and National Environmental Public Health (EPH) Data Explorer, Ctr. for Disease Control & Prevention

Emergency Loan Fund

Mississippi also has a Water Pollution Control Emergency Loan Fund, an entirely state-funded loan program that seeks to provide shorter-term loan assistance for emergency repairs and improvements that cannot wait for the regular WPCRLF funding cycle.[171]

The Emergency Fund may not, however, be an attractive solution to low-income communities. The Emergency Fund is 100% state-funded, consequently, as a product of Mississippi law, its loans are ineligible for subsidization. Loans from the Emergency Fund also have a 4% interest rate and must be repaid within just 10 years,[172] making these loans unaffordable for smaller systems. These terms may make communities reluctant to take out significant loans from the Emergency Fund, thus keeping water systems from addressing a problem until it receives a WPCRLF loan. The Emergency Fund also caps loan amounts at $350,000.[173]

Similar to our recommendations for the DWSIRLF Emergency Loan Fund, and as described in **Part III**, Overview of Analysis & Barriers to Funding Access, Mississippi could reserve some of the WPCRLF funds for emergency projects. Thus, communities would be equipped address water system problems immediately without taking on the burden of the Emergency Fund's tougher loan terms.

Next Steps

This Report provides an overview and basic analysis of funding disparities among local water systems in Mississippi. It also posits some reasons for those disparities and potential policy solutions to overcoming those barriers. However, any solutions pursued should be grounded in and informed by the experiences of those working for and with communities to improve their water systems. We offer the analysis and ideas in the Report to start the conversation but hope to continue this dialogue with community leaders to support the development of policy proposals that would effectively meet their needs.

END NOTES

[1] Aaron Bielenberg et al., *US Water Infrastructure: Making Funding Count*, MCKINSEY & COMPANY (Nov. 24, 2021), https://www.mckinsey.com/industries/electric-power-and-natural-gas/our-insights/us-water-infrastructure-making-funding-count (showing the breakdown of water and wastewater system funding by source in Exhibit 4).
[2] *Id.*
[3] *See* AM. WATER WORKS ASS'N & RAFTELIS, 2021 WATER AND WASTEWATER RATE SURVEY 6–7 (2021).
[4] Mississippi's water shutoff moratorium lasted from March 15, 2020 until May 26, 2020. *Tracking Covid-19 Water Shutoff Moratoriums*, CTR. FOR WATER SECURITY & COOPERATION (Mar. 22, 2021), https://www.ourwatersecurity.org/covidwatershutoffmoratoriumtracker.
[5] *See* AM. WATER WORKS ASS'N & RAFTELIS, *supra* note 3, at 6.
[6] *See e.g.*, *Rural child poverty was most concentrated in the Mississippi Delta*, ECON. RSCH. SERV., https://www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail/?chartId=88503 (last updated Apr. 18, 2018); *Overview of the State - Mississippi – 2021*, HEALTH RES. & SERV. ADMIN (2021), https://mchb.tvisdata.hrsa.gov/Narratives/Overview/9a62acf8-1ab6-4e9a-b92f-9037110117e7 ("The Delta region . . . is well known for its poverty . . . .").
[7] ENV'T PROT. AGENCY, DRINKING WATER INFRASTRUCTURE NEEDS SURVEY AND ASSESSMENT: SIXTH REPORT TO CONGRESS (2018), https://www.epa.gov/sites/default/files/2018-10/documents/corrected_sixth_drinking_water_infrastructure_needs_survey_and_assessment.pdf.
[8] *Id.*
[9] *Id.* at 37.
[10] *Id.*
[11] *Id.*
[12] CONG. RSCH. SERV., R46892, INFRASTRUCTURE INVESTMENT AND JOBS ACT (IIJA): DRINKING WATER AND WASTEWATER INFRASTRUCTURE (2022), https://crsreports.congress.gov/product/pdf/R/R46892.
[13] ENV'T PROT. AGENCY, SAMPLE LETTER FROM U.S. EPA ADMINISTRATOR TO GOVERNORS ABOUT THE BIPARTISAN INFRASTRUCTURE LAW (2021), https://www.epa.gov/system/files/documents/2021-12/governors-bil-letter-final-508.pdf.
[14] CONG. RSCH. SERV., R46892, *supra* note 12, at 8–9.
[15] *Id.*
[16] *Id.* at 16.
[17] *State Drinking Water Revolving Loan Fund: Reports*, MISS. ST. DEP'T OF HEALTH, https://msdh.ms.gov/msdhsite/_static/44,0,127,63.html.
[18] *See Safe Drinking Water Information System (SDWIS) Federal Reporting Services*, ENT'L PROT. AGENCY, https://www.epa.gov/ground-water-and-drinking-water/safe-drinking-water-information-system-sdwis-federal-reporting.
[19] A limited number of IUPs are available for download here: *Water Pollution Control (Clean Water) Revolving Loan Fund (WPCRLF) Program*, MISS. ST. DEP'T OF ENV'T QUALITY, https://www.mdeq.ms.gov/about-mdeq/grants-loans-and-trust-funds-available-through-mdeq/water-pollution-control-clean-water-revolving-loan-fund-wpcrlf-program/. The research team contacted program staff directly to acquire the remaining years, which are kept on file at MDEQ.
[20] *National Environmental Public Health Tracking Network*, CTR. FOR DISEASE CONTROL & PREVENTION, https://ephtracking.cdc.gov/DataExplorer/ (last accessed April 5, 2021).
[21] Both datasets were created by this paper's authors and are subject to mistakes from human error; the findings should be taken to indicate general trends and we suggest that raw data be verified before any more robust analysis. The databases are not intended for widespread use but are provided for replication purposes.
[22] Molly Schwartz, *The Water Crisis in Jackson, Mississippi, Is a Dire Warning Sign,* MOTHERJONES (Mar. 24, 2021), https://www.motherjones.com/politics/2021/03/water-crisis-in-jackson-mississippi-is-a-dire-warning-sign/.
[23] *See* Aallyah Wright, *Delta Families without Running Water 'Opened a Lot of Eyes.' PSC Looks to Document Water Access in State*, MISS. TODAY (Dec, 16 2019), https://mississippitoday.org/2019/12/16/delta-families-without-running-water-opened-a-lot-of-(eyes-psc-looks-to-document-water-access-in-state/.
[24] MISS. SECTION OF THE AM. SOC'Y OF CIV. ENG'RS, REPORT CARD FOR MISSISSIPPI'S INFRASTRUCTURE 30, 78 (2020), https://infrastructurereportcard.org/wp-content/uploads/2016/10/FullReport-MS_2020-1.pdf.
[25] Andre M. Perry, Joseph W. Kane, & Carl Romer, *In Jackson, Miss., A Water Crisis has Revealed the Racial Costs of Legacy Infrastructure*, BROOKINGS (Mar. 29, 2021), https://www.brookings.edu/blog/the-avenue/2021/03/26/in-jackson-miss-a-water-crisis-has-revealed-the-racial-costs-of-legacy-infrastructure/.
[26] *See* Jason Johnson, *How Racist Infrastructure Caused the Jackson, Mississippi, Water Crisis*, SLATE (Mar. 22, 2021), https://slate.com/news-and-politics/2021/03/jackson-mississippi-water-crisis-racial-justice-black-communities.html; Andre M. Perry, Joseph W. Kane, & Carl Romer, *supra* note 25.

[27] MISS. DEP'T OF ENV'T QUALITY, WATER POLLUTION CONTROL REVOLVING LOAN FUND PROGRAM INTENDED USE PLAN 2020 36 (2020), https://www.mdeq.ms.gov/wp-content/uploads/2020/07/FY20IUP_Final.pdf.
[28] Mississippi must match 20% of cap grant funds, and cannot use cap grant money until it deposits the money in the WPCRLF and D-RLF programs. *See* ENV'T PROT. AGENCY, QUESTIONS AND ANSWERS ON THE STATE REVOLVING FUND (SRF) CASH DRAW PROPORTIONALITY REQUIREMENTS 4 (2013), https://www.epa.gov/sites/production/files/2015-04/documents/cash_draw_proportionality.pdf.
[29] Pub. L. No. 117-58, §§ 50001–50222 (2021).
[30] CONG. RSCH. SERV., R46892, *supra* note 12, at 3.
[31] ENV'T PROT. AGENCY, *supra* note 7, at 37.
[32] *American Rescue Plan Act (ARPA): Rural Water Associations Infrastructure Grant Program*, MISS. ST. DEP'T OF HEALTH, https://msdh.ms.gov/msdhsite//_static/30,0,76,1000.html (last visited Jul. 11, 2022); American Rescue Plan Act, Pub. L. No. 117-2 (2021).
[33] Contracts for engineering services need to comply with federal procurement processes according to 40 U.S.C. § 1101. Under 40 U.S.C. § 1101 the procurement process includes requirements such as a public announcement for the solicitation of an engineering contract and selection of a minimum of three of the most highly qualified firms. *See* Env't Prot. Agency, Interpretative Guidance for Certain Amendments in the Water Resources Reform and Development Act to Titles I, II, V, and VI of the Federal Water Pollution Control Act (Jan. 6, 2015), https://www.epa.gov/sites/default/files/2015-04/documents/water_resources_reform_and_development_act_guidance.pdf.
[34] *See* ENV'T PROT. AGENCY, *supra* note 7, at 71–72, App'x E.
[35] *See id*.
[36] MISS. ST. DEP'T OF HEALTH, MISSISSIPPI DRINKING WATER FFY-2021 INTENDED USE PLAN 1 (2021) https://msdh.ms.gov/msdhsite/_static/resources/7992.pdf.
[37] 42 U.S.C. § 300j-12(a)(1)(A).
[38] MISS. ST. DEP'T OF HEALTH, *supra* note 36.
[39] MISS. SECTION OF THE AM. SOC'Y OF CIV. ENG'RS, *supra* note 24, at 30.
[40] *Id.* at 31.
[41] *Id.* at 32.
[42] *EPA's 6th Drinking Water Infrastructure Needs Survey and Assessment*, ENV'T PROT. AGENCY, https://www.epa.gov/dwsrf/epas-6th-drinking-water-infrastructure-needs-survey-and-assessment (select Mississippi in drop-down menu).
[43] MISS. SECTION OF THE AM. SOC'Y OF CIV. ENG'RS, *supra* note 24, at 32.
[44] Alex Rozier, *Policy Experts Explore Jackson Water Solutions, Highlight Void in Federal Aid,* MISSISSIPPI TODAY, (Mar. 25, 2021), https://mississippitoday.org/2021/03/25/policy-experts-explore-jackson-water-solutions-highlight-void-in-federal-aid/.
[45] *Id.*
[46] For a list of other sources of water infrastructure funding, *see* MISS. DEP'T OF ENV'T QUALITY, GRANTS AND LOANS FOR WASTEWATER, DRINKING WATER, STORM WATER, AND SOLID WASTE PROJECTS (2021), https://www.mdeq.ms.gov/wp-content/uploads/2021/10/2021-Final-Funding-Sources-Matrix.pdf.
[47] *Id.*
[48] Oliver Laughland, *There's No Excuse for This: Thousands in Mississippi city still without water weeks after storms*, THE GUARDIAN (Mar. 4, 2021), https://www.theguardian.com/environment/2021/mar/04/mississippi-city-without-water-weeks-after-storms.
[49] Alex Rozier, *supra* note 44.
[50] MISS. SECTION OF THE AM. SOC'Y OF CIV. ENG'RS, *supra* note 24, at 30.
[51] *How the Drinking Water State Revolving Fund Works*, ENV'T PROT. AGENCY, https://www.epa.gov/dwsrf/how-drinking-water-state-revolving-fund-works#tab-1 (last accessed April 17, 2021).
[52] *Id*.
[53] MISS. CODE ANN. § 75-6-201–236; MISS. ST. DEP'T OF HEALTH, *supra* note 36. Intended Use Plans are codified in the Mississippi Code of Regulations. *See* 33 MISS. CODE R. § 1-12.
[54] MISS. DEP'T OF ENV'T QUALITY, GRANTS AND LOANS, *supra* note 46.
[55] MISS. ST. DEP'T OF HEALTH, *supra* note 36, at 9.
[56] *Id*.
[57] *Id.* at 10.
[58] *Id.* at 9.
[59] *Id.* at 5–6.
[60] 40 C.F.R. § 35.3525(a)(1)(i).
[61] 40 C.F.R. § 35.3520(f)(2).
[62] MISS. ST. DEP'T OF HEALTH, *supra* note 36, at 12.
[63] *Id*.
[64] *Id.* at 16.

[65] Telephone Interview with Harry Gong, Environmental Engineer, Mississippi State Department of Health (Apr. 14, 2022).
[66] MISS. ST. DEP'T OF HEALTH, *supra* note 36, at 19.
[67] *See* MISS. ST. DEP'T OF HEALTH, DRINKING WATER STATE REVOLVING FUND LOAN PROGRAM, STATE OF MISSISSIPPI ANNUAL REPORT FEDERAL FISCAL YEAR 2020 9 (2020), https://msdh.ms.gov/msdhsite/_static/resources/13126.pdf [hereinafter ANNUAL DRINKING WATER REPORT FFY-2020]. Annual Reports from the previous years also available at *Reports*, MISS. ST. DEP'T OF HEALTH, https://msdh.ms.gov/msdhsite/_static/44,0,127,63.html.
[68] 42 U.S.C. § 300j-12(a)(1)(B).
[69] MISS. ST. DEP'T OF HEALTH, *supra* note 36, at 1.
[70] 42 U.S.C. § 300j-12(a)(2)(A).
[71] *About the Drinking Water State Revolving Fund (DWSRF) Set-Asides*, ENV'T PROT. AGENCY, https://www.epa.gov/dwcapacity/about-drinking-water-state-revolving-fund-dwsrf-set-asides (last accessed April 17, 2021).
[72] ANNUAL DRINKING WATER REPORT FFY-2020, *supra* note 67, at 17.
[73] *Id.* at 7; *see also id.* at Table 3.
[74] ANNUAL DRINKING WATER REPORT FFY-2020, *supra* note 67, at Table 6.
[75] MISS. ST. DEP'T OF HEALTH, *supra* note 36, at 1.
[76] ENV'T PROT. AGENCY, *supra* note 7.
[77] Wendi Wilkes, *EPA and States Kick Off 2020 Drinking Water Needs Survey*, ASS'N OF STATE DRINKING WATER ADMINISTRATORS (Jun. 21, 2019), https://www.asdwa.org/2019/06/21/epa-and-states-kick-off-2020-drinking-water-needs-survey/.
[78] ANNUAL DRINKING WATER REPORT FFY-2020, *supra* note 67, at 7.
[79] 42 U.S.C. § 300j-12(a)(1)(C).
[80] 42 U.S.C. § 300j-12(e); MISS. ST. DEP'T OF HEALTH, *supra* note 36, at 1.
[81] 42 U.S.C. § 300j-12(e).
[82] A cash draw is the transfer of funds from the Federal Treasury into the state's revolving fund. The cash draw ratio is calculated based on the amount of federal capitalization grant and state matching provided for that year. *See* ENV'T PROT. AGENCY, QUESTIONS AND ANSWERS, *supra* note 28, at 2–3 (showing the calculation).
[83] MISS. ST. DEP'T OF HEALTH, *supra* note 36, at 7. Mississippi must draw funds from the Federal Treasury into its D-RLF in this proportion. Alternatively, Mississippi could first deposit into the revolving fund, and then disburse, to the loan recipients, 100% of its total required match. After all the match funds are disbursed, Mississippi could then draw federal funds from the Federal Treasury at a ratio of 100% federal/0% state funds. ENV'T PROT. AGENCY, QUESTIONS AND ANSWERS, *supra* note 28, at 4.
[84] ANNUAL DRINKING WATER REPORT FFY-2020, *supra* note 67, at 7.
General obligation bonds are backed by the government's total revenue, as in both tax revenue and operating revenue. *General Obligation Bond*, CORP. FINANCE INST., https://corporatefinanceinstitute.com/resources/knowledge/trading-investing/general-obligation-bond/ (last accessed April 23, 2021).
[85] ANNUAL DRINKING WATER REPORT FFY-2020, *supra* note 67, at 7; MISS. DEP'T OF ENV'T QUALITY, GRANTS AND LOANS, *supra* note 46.
[86] ANNUAL DRINKING WATER REPORT FFY-2020, *supra* note 67, at 7.
[87] 40 C.F.R. § 35.3135(b)(4).
[88] ANNUAL DRINKING WATER REPORT FFY-2020, *supra* note 67, at Table 3.
[89] *Id.*
[90] Pub. L. No. 115-270, § 2015(d), 132 Stat. 3765, 3855 (2018); MISS. ST. DEP'T OF HEALTH, *supra* note 36, at 2.
[91] MISS. ST. DEP'T OF HEALTH, *supra* note 36, at 2; America's Water Infrastructure Act, Pub. L. No. 115-270, § 2015(c), 132 Stat. 3765, 3855 (2018).
[92] *See* Consolidated Appropriations Act, 2021, Pub. L. No. 116–260, State and Tribal Assistance Grants, 134 Stat. 1182, 1510 (2020); MISS. ST. DEP'T OF HEALTH, *supra* note 36, at 15.
[93] ANNUAL DRINKING WATER REPORT FFY-2020, *supra* note 67, at 6.
[94] *Id.*
[95] ANNUAL DRINKING WATER REPORT FFY-2020, *supra* note 67, at 9.
[96] *Id.* at 10.
[97] MISS. ST. DEP'T OF HEALTH, *supra* note 36, at 10.
[98] This means that loan applicants eligible for 45% PF and requesting over $1,111,111 would not be able to receive the full PF for which they would otherwise be eligible. Loan applicants eligible for 15% PF that apply for loans over $3,333,333 would not receive the full PF for which they are eligible.
[99] Although this exceeds the $5 million funding limit, this limit may be exceeded on a case-by-case basis. MISS. ST. DEP'T OF HEALTH, ANNUAL DRINKING WATER REPORT FFY-2019 Table 1 (2019), https://msdh.ms.gov/msdhsite/_static/resources/8405.pdf.
[100] For past annual reports, see: *State Drinking Water Revolving Loan Fund: Reports*, MISS. STATE DEP'T. OF HEALTH, https://msdh.ms.gov/msdhsite/_static/44,0,127,63.html (last accessed April 23, 2021).
[101] *See* Appendix A, Data from DWSRF Annual Reports, FYs 2010–2020.

[102] This issue was not a point of inquiry during our team's interviews and may warrant further investigation.
[103] *See* MISS. SECTION OF THE AM. SOC'Y OF CIV. ENG'RS, *supra* note 24, at 30.
[104] Please refer to Appendix A-DWSIRLF-Data for a breakdown of the funding and data for each project and its respective county.
[105] ANNUAL DRINKING WATER REPORT FFY-2020, *supra* note 67, at 2.
[106] MISS. ST. DEP'T OF HEALTH, *supra* note 36, at Appendix 1.
[107] MISS. DEP'T OF ENV'T QUALITY, GRANTS AND LOANS, *supra* note 46.
[108] 33 U.S.C. § 1383; *Learn About Clean Water State Revolving Fund,* ENV'T PROT. AGENCY, https://www.epa.gov/cwsrf/learn-about-clean-water-state-revolving-fund-cwsrf (last visited Mar. 12, 2021).
[109] MISS. CODE ANN. § 49-17-81–89; MISS. DEP'T OF ENV'T QUALITY, *supra* note 27, at 4.
[110] MISS. SECTION OF THE AM. SOC'Y OF CIV. ENG'RS, *supra* note 24, at 79.
[111] *Id*.
[112] *Id.*
[113] *Id.*
[114] *Id.* at 80.
[115] MISS. DEP'T OF ENV'T QUALITY, *supra* note 27, at 5. This Report primarily cites to Intended Use Plans and other agency publications that reflect the current policies of MDEQ; these policies are generally added to the Mississippi Code of Regulations at 11 MISS. CODE R. § 6-8 subsequently. Regulations governing projects after 2004 may be found at 11 MISS. CODE R. § 6-7 and appendices.
[116] MISS. DEP'T OF ENV'T QUALITY, *supra* note 27, at 5.
[117] *Id*.
[118] *Id.*
[119] *Id.*
[120] 11 MISS. CODE R. § 6-7-A, Appendix 11-6-7-A(J)(2).
[121] MISS. DEP'T OF ENV'T QUALITY, GRANTS AND LOANS, *supra* note 46.
[122] *See* MISS. DEP'T OF ENV'T QUALITY, *supra* note 27, at 5.
[123] *Id.* at 34.
[124] *Id*.
[125] *Id*.
[126] "Green" is defined by the EPA's 2012 CWSRF 10% Green Project Reserve: Guidance for Determining Project Eligibility. *Id.* at 35.
[127] *Id*.
[128] *Id*.
[129] *Id.* at 35.
[130] *Id.* at 4.
[131] *Id*.
[132] *Id.* at 35.
[133] *Id.* at 37.
[134] *Id.* at 57.
[135] *Id.* at 37.
[136] *Id.*
[137] 33 U.S.C. § 1383; *see also* ENV'T PROT. AGENCY, SRF FUND MANAGEMENT HANDBOOK (2018), https://www.epa.gov/sites/production/files/2018-04/documents/fund_management_handbook_2018final.pdf.
[138] MISS. DEP'T OF ENV'T QUALITY, *supra* note 27, at 4.
[139] ENV'T PROT. AGENCY, *supra* note 137, at 18.
[140] 40 C.F.R. § 35.3150.
[141] ENV'T PROT. AGENCY, QUESTIONS AND ANSWERS, *supra* note 28, at 3.
[142] *Id.* at 61.
[143] *Id.*
[144] ENV'T PROT. AGENCY, QUESTIONS AND ANSWERS, *supra* note 28, at 8.
[145] Technically speaking, the state match must also be disbursed to projects in order for Mississippi to "draw down" money from Federal Cap Grants. However, once Mississippi has deposited its state match into the program, it can count any non-federal money disbursed from the program as a match disbursement. ENV'T PROT. AGENCY, QUESTIONS AND ANSWERS, *supra* note 28, at 8.
[146] MISS. DEP'T OF ENV'T QUALITY, *supra* note 27, at 47.

[147] MISS. DEP'T OF ENV'T QUALITY, ANNUAL REPORT FOR THE WATER POLLUTION CONTROL REVOLVING LOAN FUND PROGRAM FISCAL YEAR 2019 13 (2019), https://swefcsrfswitchboard.unm.edu/resources/mississippi/Mississippi%20CW%20SRF%20annual%20report.pdf.
[148] MISS. DEP'T OF ENV'T QUALITY, *supra* note 27, at 47.
[149] 33 U.S.C.A. § 1383 (West); *see also* ENV'T PROT. AGENCY, *supra* note 137; *Learn About the Clean Water State Revolving Fund*, ENV'T PROT. AGENCY, https://www.epa.gov/cwsrf/learn-about-clean-water-state-revolving-fund-cwsrf (last accessed April 17, 2021)
[150] ENV'T PROT. AGENCY, *supra* note 137.
[151] MISS. DEP'T OF ENV'T QUALITY, *supra* note 27, at 34.
[152] *Id*.
[153] *Id.* at 55.
[154] *Id.* at 34.
[155] *Id.* at 14. Although Tutwiler should be eligible for a $2 million subsidy, Mississippi's 2020 IUP does not indicate the subsidy amount for the town.
[156] *Id.* at 15–32.
[157] Those with outstanding debt owed to the Rural Utilities Service (RUS) may be able to proceed with RUS approval. MISS. DEP'T OF ENV'T QUALITY, *supra* note 27, at 41; MISS. ST. DEP'T OF HEALTH, *supra* note 36, at 15.
[158] 11 MISS. CODE R. § 6-7.2(F)(2)(e) ("Basic financial assistance requirements" include: "The applicant must not be in arrears in repayments to the WPCRLF, the WPCELF, the WPALP or on any other loan."). Those with outstanding debt owed to the Rural Utilities Service (RUS) may be able to proceed with RUS approval. MISS. DEP'T OF ENV'T QUALITY, *supra* note 27, at 41; MISS. ST. DEP'T OF HEALTH, *supra* note 36, at 15.
[159] MISS. DEP'T OF ENV'T QUALITY, *supra* note 27, at 15–17, 35, 38.
[160] *Id.* at 15–17.
[161] *Id.* The City of Magnolia was on the planning list for a loan of $2.5 million, but was eligible only for $1.0 million of forgiveness. The project might have some other term in the loan, such as a construction contingency, that would offset the amount of forgiveness, which would explain why the town would not be eligible for 75% of the $2.5 million loan. The Town of Coldwater was on the planning list for three projects totaling $4.5 million, but would only be eligible for the $2 million maximum forgiveness across all three projects were they applied for in the same year. *See id.* (explaining limits on and offsets to principal forgiveness beyond the generally applicable 75% per project cap).
[162] *Id.* at 15–32, 57.
[163] Data was drawn from INTENDED USE PLANS. *See* Appendix B.
[164] WATER POLLUTION CONTROL REVOLVING LOAN FUND PROGRAM, MDEQ INTENDED USE PLANS 2011-2020 (data available in Appendix B); *National Environmental Public Health Tracking Network*, *supra* note 20.
[165] *Mississippi Cities by Population,* CUBIT, https://www.mississippi-demographics.com/cities_by_population (last accessed April 17, 2021) (data from U.S. Census Bureau).
[166] ACS Demographic and Housing Estimates: Tutwiler Town, Mississippi, CENSUS.GOV, available at https://data.census.gov/cedsci/table?g=1600000US2875040&tid=ACSDP5Y2020.DP05 (last visited Apr. 20, 2022).
[167] Mississippi Counties by Population, MISSISSIPPI DEMOGRAPHICS, available at https://www.mississippi-demographics.com/counties_by_population (last visited Apr. 20, 2022).
[168] *About Us*, HARRISON CTY. UTIL. AUTH., available at https://hcua-ms.us/about-us (last visited Apr. 20, 2022)
[169] *National Environmental Public Health Tracking Network*, *supra* note 20.
[170] *Id.*
[171] *Water Pollution Control Emergency Loan Fund (WPCELF) Program,* MISS. DEP'T OF ENV'T QUALITY https://www.mdeq.ms.gov/about-mdeq/grants-loans-and-trust-funds-available-through-mdeq/water-pollution-control-emergency-loan-fund-wpcrlf-program/ (last accessed May 23, 2021).
[172] MISS. DEP'T OF ENV'T QUALITY, GRANTS AND LOANS, *supra* note 46.
[173] *Id.*