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Program Background

On June 8, 2021, Governor Reynolds approved House File 861, which appropriated funds to the Iowa Department of Homeland Security and Emergency Management (HSEM) for the purpose of conducting a statewide levee districts study.

The study concentrated on levee districts in 10 counties located along the Mississippi and Missouri Rivers. It revealed that Iowa's levee districts face significant challenges in maintaining and operating their levees. The study identified three key factors contributing to these challenges: increased regulatory requirements, higher costs, and a decline in rural populations. The study also determined that the current approach to managing and financing levee districts within Iowa is unsustainable. The study recommended changes to levee management, including encouraging levee districts to consolidate at the United States Army Corps of Engineers (USACE) system level, adopting a watershed approach to levee management, establishing a state levee agency, and developing a comprehensive strategic plan for flood risk reduction along Iowa's waterways. The financial recommendations included increasing the minimum assessment amount, granting taxing authority to Watershed Management Authorities, implementing a statewide levee assessment, and requiring levee districts to establish a sinking fund for future maintenance, operations, and improvements.



US Army Corps of Engineers, Omaha District, completes an initial breach closure on levee L575 near Percival in 2019

In the spring of 2023, the Iowa General Assembly passed House File 711, which was signed by Governor Reynolds and established the Iowa Levee Improvement Program in Iowa Code Chapter 418A, effective June 1, 2023. In addition to the Levee Improvement Program, House File 711 established the Levee Improvement Fund which is earmarked for up to \$5 million annually for state fiscal years 2024 through 2028.

House File 711 also established the Office of Levee Safety (OLS) within HSEM, which serves as the coordinating entity for the Levee Improvement Program. The coordination will include:

- Working with the Iowa Flood Mitigation Board (FMB) and Iowa Geological Survey (IGS) to achieve the objectives of the Levee Improvement Program.
- Collaborating with local levee sponsors and city and county officials to facilitate the collection of information, consolidate issues and concerns, and disseminate best practices across the Iowa levee community.
- Serving as a liaison between the local and federal governments to identify and address larger issues and find solutions that impact more than a single levee district at a time.

Levee Improvement Program

Iowa Code Chapter 418A establishes the Levee Improvement Program to reduce and manage risk associated with a hazardous event caused by inadequate levee design, structural performance, or operational control. The legislation outlines three key tasks to achieve the goal:

- Identification and geophysical survey of all levees within the state.
- Development of a rating system to identify the most "at-risk" levees.
- Provision of funding to address shortfalls in order to reduce risk.

Iowa Code Chapter 418A identifies four parties responsible for executing the Iowa Levee Improvement Program: Flood Mitigation Board (FMB), Iowa Department of Homeland Security and Emergency Management (HSEM), Office of Levee Safety (OLS), and Iowa Geological Survey (IGS).

The FMB will administer the program in cooperation with the OLS. Funds will be awarded to levee districts applying for assistance on a cost-share basis, up to a maximum of 50% of the estimated or actual cost of the project, whichever is less. The FMB will consider the rating of the levee when making its decision.



Gator UTV with EM geophysical unit assessing levee in Des Moines

HSEM will be responsible for the publication and submission of applications for cost-share funding under the program. The Department may enter into a Chapter 28E agreement to assume responsibility for program management on behalf of the board. HSEM is also responsible for preparing a statewide levee assessment report for the governor and general assembly no later than January 5 of each year. The report must provide an overview of the condition of levees in each levee district, with a particular focus on those that require the most urgent repair or reconstruction. In addition, the report should include the budget of each levee district for financing repair or construction efforts, as well as the results of initiatives to repair or reconstruct levees using cost-share funds awarded to the governing bodies of levee districts through the levee improvement program. Moreover, the report should set forth future plans for administering the program. The statewide levee assessment report may also include recommendations for additional funding and legislation required to achieve the program's objectives.

The OLS will collaborate with the FMB and IGS to implement this chapter. The OLS and the FMB work in partnership with other state and federal agencies, including USACE and the Federal Emergency Management Agency (FEMA), to implement the National Levee Safety Program (NLSP) as outlined in 33 U.S.C. Chapter 46. In partnership with the FMB, the OLS will provide assistance to communities that benefit from levees, including levee districts. Furthermore, the OLS and the FMB will assess the optimal methods for achieving the objectives of the Levee Improvement Program. The IGS will provide assistance to the OLS in the completion of a statewide analysis of the condition of the state's levees.

Stakeholders

In addition to the parties specifically identified in Chapter 418A, there are several other stakeholders involved at the local, state, and federal levels. The most critical stakeholders for the success of the Levee Improvement Program are the governing bodies of the individual levee districts. Their collaboration and endorsement are vital for attaining the program's goals. These governing bodies, also known as sponsors, control access to the levees needed for surveys and provide local matching funds for any necessary repair or reconstruction projects.

The County Auditor and County Emergency Manager are key local stakeholders. The auditor's responsibilities include financial recordkeeping, assessment management, public notification for meetings and hearings, and trustee election oversight. The levee sponsors rely on the emergency manager to provide assistance during high-water events. This includes disseminating information about the levee's condition and, if necessary, notifying residents and businesses to evacuate the area behind the levee.

Furthermore, the Iowa Department of Agriculture and Land Stewardship (IDALS), Iowa Department of Natural Resources (DNR), Iowa Department of Transportation (DOT), and the Iowa Economic Development Authority (IEDA) are all stakeholders. The DNR is responsible for floodplain management and the issuance of permits for construction within the floodplain. This includes the issuance of permits for new levees or modifications to existing ones. The majority of Iowa's levees are designed to protect agricultural lands and family farms. In the event of a failure, the consequences for Iowa's agricultural industry would be significant. The failure of a levee can have a significant impact on Iowa's transportation networks and economic stability. The 2019 floods in southwest Iowa demonstrated that the failure of a levee can have a significant impact on the state's transportation network and economic stability, as evidenced by the closure of multiple state and county highways, railroad lines, and even Interstate 29.

At the federal level, the USACE is the authority on levees and dams in the United States. The USACE is responsible for reviewing and approving the construction of all new levees, as well as modifications and repairs made to existing ones. In addition, the USACE is responsible for levee certification. A certified levee is one that has been determined to meet the technical specifications for containing floodwaters from an annual 1% chance event, otherwise known as a 100-year flood. In addition, the USACE oversees the implementation of the PL 84-99 program on behalf of the federal government. The 84-99 program is essentially an insurance program for levee sponsors. In the event of a levee breach or overtopping event, a properly maintained and operated levee will qualify for federally funded emergency repairs.

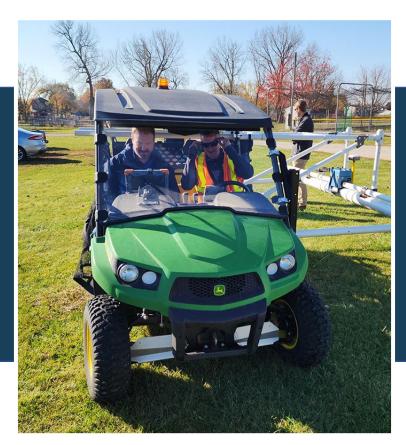
Another key federal stakeholder is the Federal Emergency Management Agency (FEMA). The USACE certifies the structure and operations of a levee, and FEMA accredits a levee's flood protection against a 100-year flood. Property owners situated behind an accredited levee are exempt from the requirement to maintain costly flood insurance policies on their properties. The loss of accreditation for a levee can have a significant economic impact on a community. Non-federally constructed levees that have never been enrolled in the PL 84-99 program may be eligible for federal assistance through

FEMA's Public Assistance (PA) program. Please be advised that federally constructed levees or those enrolled in the 84-99 program are not eligible for FEMA disaster assistance funding, regardless of whether they are currently enrolled.

Two other federal agencies that can have a significant impact on levee districts are the Environmental Protection Agency (EPA) and the Fish and Wildlife Service (FWS). These agencies establish policies that affect our waterways and the surrounding areas, so it is important to be aware of their role. Such policies may require the implementation of costly modifications to existing levees.

Staffing

The OLS is currently staffed by two full-time employees, with a third providing support as needed. The Disaster Grants and Administration Bureau Chief oversees the office and is supported by a Recovery Operations Officer whose primary responsibility is the management of the Levee Improvement Program. An additional Recovery Operations Officer provides supplementary support, though their primary responsibilities lie outside the scope of the OLS. geophysical surveys of the levees are conducted by the IGS with the use of existing personnel.



Office of Levee Safety's Jeff Jackson (left) tests out the EM geophysical unit on the Gator UTV

Current Year Activities

The OLS has made significant progress over the past year, outpacing the originally anticipated timeframe to ensure that the Levee Improvement Fund is promptly allocated to levee districts most in need of these essential resources. For further details of our achievements during this reporting period, please refer to the following sections.

Levee Improvement Fund

The OLS is scheduled to receive \$5 million per year through 2027. Additionally, the OLS received \$10 million this year, which will be allocated to levee improvements. A portion of the original \$5 million, amounting to 5%, has been set aside for program administration. The Office incurred expenses of \$413,548 during the current fiscal year. The expenditures included \$133,598 in HSEM administration costs, \$149,200 for IGS survey expenses, and a \$131,250 payment to the Lower Missouri River Flood Risk and Resiliency Feasibility Study.

To streamline the application process, the Levee Improvement Program Application was developed based on the successful model of the Flood Mitigation Fund Application. This approach, combined with a fillable online application, provides applicants with enhanced accessibility and ease of completion. The application was approved by the FMB promptly, concurrent with the rating system.

In collaboration with the HSEM financial team, the OLS has incorporated the Levee Improvement Fund into the EMGrants Pro platform, ensuring adherence to program funding protocols. The project application was officially launched on September 16, 2024, following public notification that was distributed to all districts.

Levee Rating System

The recently implemented Levee Rating System, used for the distribution of funds, is designed to ensure fairness and impartiality. The system gives priority to levees that require the most attention and provide the greatest protection to people, property, agricultural lands, and key infrastructure. The system employs a comprehensive set of criteria to evaluate levees, including:

- Levee construction quality and age
- Regular inspection outcomes
- Historical water levels
- Financial standing of the levee district
- Value of protected assets
- Involvement in the USACE PL-84-99 Program, which offers support and funding in the event of flood damage
- · Data from the IGS

Each factor is assigned a value between 1 and 5, with 1 indicating an optimal levee condition and 5 indicating a critical need for repair. The FMB approved Version 1 of the rating system on June 25, 2024, following its presentation on May 28, 2024.

The Levee Rating System has been successfully implemented and is proving to be an effective tool. At present, all Iowa levees included in the National Levee Database have been assigned an initial rating. However, it should be noted that many of these ratings are based on incomplete information, including missing financial data and IGS survey ratings. As new data becomes available, the rating scores will be updated accordingly, ensuring a more accurate assessment of each levee's condition.

The Annual Report is to provide a prioritized list of levees with the highest critical repair needs, along with the budgetary status of each levee district. While the Levee Rating System is currently active, some data remains incomplete. We are still awaiting financial records from several levee districts, and the IGS is currently conducting levee surveys, which are projected for completion by 2027. These surveys are a critical component of the rating system. Until they are finalized, some data gaps will remain. Please note that the data may result in a change to the rating of a levee. Consequently, a complete and prioritized list is not currently available.

Town Halls

Our team has made significant progress in meeting the objectives of the levee project thanks to improved communication with stakeholders. The OLS identified 16 locations across the state in different levee districts to hold town hall-style meetings open to the public, levee stakeholders, city and county leaders, flood plain managers, and emergency managers. The primary objective for these meetings was to share information from the 2022 Levee District Study as well as the new Levee Improvement Program and the OLS with levee stakeholders.



Disaster Grants and Administration Bureau Chief Mark Newhall speaks at Town Hall Meeting

Stakeholders were encouraged to provide feedback on the challenges and concerns they encountered in operating and maintaining their levees. The meetings attracted nearly 200 participants, providing an open forum for discussion. This valuable input was instrumental in the development of both the Levee Improvement Program Project Application and the Levee Rating System.

Communication

To facilitate communication with levee districts and stakeholders, the OLS introduced a quarterly newsletter, *The Levee Connection*, on August 21, 2024. This newsletter provides updates from the OLS, highlights best practices and innovative projects from levee districts statewide, and includes relevant information from the NLSP.

The OLS remains committed to outreach. This year, the Office has further reinforced its collaborative relationships by engaging with both the South Dakota and Iowa Silver Jackets programs, as well as presenting on our relationship with the State of Iowa Silver Jackets program during a National Silver Jackets Program webinar. These efforts facilitate enhanced collaboration on flood risk management and levee safety initiatives.

Moreover, the Office disseminated information about Iowa's levee safety initiatives at high-profile national events, including the Association of State Dam Safety Officials (ASDSO) National Conference and the National Association of Flood and Stormwater Management Agencies (NAFSMA) Annual Conference. These presentations reinforced Iowa's reputation as a national leader in levee safety and flood mitigation.

Partnerships

The OLS has made significant headway in building robust, collaborative relationships with key partners, including Levee Sponsors, the USACE districts in Omaha, Rock Island, and St. Paul, as well as the NLSP. On February 13, 2024, the NLSP team conducted in-person discussions in Iowa to foster collaboration and mutual support. During this visit, representatives from the NLSP participated in a town hall meeting in Black Hawk County and conducted site visits to flood mitigation and levee development projects in Cedar Rapids. It is noteworthy that Iowa was the first state in the nation to establish an OLS, which serves to underscore our leadership in this critical area.

Since that visit, the OLS has maintained active engagement with the NLSP through both virtual and in-person meetings and has co-presented at national conferences, and is working with the National Levee Database to improve levee identification, develop a State Dashboard, and guarantee the precision of the database by incorporating new levees and removing obsolete entries.

Thanks to the robust partnerships that have been established with the NLSP and the USACE, several Iowa levees were selected for a comprehensive national review by the NLSP. Iowa has also been chosen as one of a select few states to take part in the National Critical Infrastructure Partnership Advisory Council (CIPAC) initiative. The initiative is led by the Cybersecurity and Infrastructure Security Agency (CISA) and the USACE with the goal of protecting critical infrastructure across the country. Two levee districts in Iowa will participate in a dedicated five-year initiative within the levee coordinating group, working in collaboration with federal, state, and local partners.

The coordinating group's objective is to facilitate cross-sector collaboration and strategic alignment in areas critical to cybersecurity, infrastructure security, safety, and resilience for levees and the communities they protect. This collaboration exemplifies Iowa's commitment to enhancing infrastructure resilience and security, with a primary focus on protecting lives, property, and resources for our state and its citizens.

Additionally, the OLS has established the Levee and Drainage Workgroup, which includes representatives from IDALS, the DNR, levee sponsors, levee engineers, state legislators, and legal experts. The group has convened on three occasions this year to discuss key topics, including Iowa Code 468, the consolidation of levee districts, and to provide strategic guidance on various initiatives.

Financials

The OLS has begun a statewide data collection program targeting financial information from levee districts. To date, over 70% of districts have submitted their financial information for the 2023 fiscal year. The data revealed that the total revenue for reporting levee districts is \$11,452,079.20, while total expenditures amount to \$11,794,956.99, resulting in a deficit of \$342,877.79. This confirms that many levee districts operate at a financial deficit, which presents significant challenges not only for making necessary improvements but also for covering basic maintenance costs.

In addition, the assessment revealed inconsistencies in how levee districts track their expenses, with categories varying across districts. To address this issue, the OLS has collaborated with County Auditors and levee districts to standardize financial records into the following categories: administrative, maintenance, utilities, insurance, supplies, equipment, engineering, legal, contracted labor, and fuel/lubricants. This standardized approach will enhance the accuracy and consistency of financial tracking, allowing for more comprehensive data analysis in future assessments.

2024 Flood Response

In the aftermath of the June flooding, the OLS provided the State Emergency Operations Center (SEOC) with invaluable assistance in the form of real-time coordination and support.

The OLS worked closely with levee districts to collect crucial data on the impact of flooding, to monitor progress, and to address any issues that arose. The OLS coordinated its efforts with the USACE, and further collaboration with the NLSP and National Levee Database teams was undertaken to identify affected levees and collect real-time data, thereby enhancing our ability to respond to flooding. This integrated approach enhanced Iowa's capacity to combat the flood and mitigate further damage.

The OLS took the lead in establishing the Inter-agency Levee Review Committee. Their primary objective is to ensure that all levees impacted by the floods have a designated responsible party and a solution in place.

Agreement with the University of Iowa Hydroscience & Engineering Department

The Hydroscience & Engineering Department at the University of Iowa (IIHR) submitted a proposal to the OLS to conduct qualitative engineering assessments concerning levee segments as identified by the IGS surveys conducted during the previous year. In June 2024, the FMB approved the concept and authorized the Office to spend up to \$100,000 on this type of engineering analysis. The assessments will be conducted on segments identified in consultation with the OLS and the IGS. The objective is to identify up to 10 locations in FY2025 and up to 20 locations in future years, contingent on the FMB's approval of the program's continuation. As part of their engineering assessments, IIHR will conduct site inspections, historical research, and hydrologic/hydraulic assessments, and present their findings to the OLS and the FMB. Furthermore, the reports will be made available to the levee sponsors who have undergone assessment, to assist their supporting engineers in developing approaches to address concerns.

Survey Results from the Iowa Geological Survey

The OLS has received the initial survey results from the IGS and has conducted a comprehensive review. To improve the efficacy of these reports, the OLS has also partnered with IGS to develop methodologies for more accurately identifying risks and enhancing the reports' user-friendliness for levee districts. The objective of these enhancements is to provide districts with the necessary tools to more effectively utilize the data in order to make critical improvements. The IGS is currently revising the reports, and new versions are expected by the end of this year or early next year.

The following chart shows the levee surveys that were completed in 2023.

	2023 IGS Levee Survey List			
Levee	County	Miles	Date Completed	
Burlington Bottoms LDD	Des Moines	3.56	11/10/2023	
Des Moines River	Polk	10.57	11/9/2023	
Des Moines WDM	Polk	4.27	11/3/2023	
Des Moines WW	Polk	0.75	11/14/2023	
Hamburg Ditch 6	Fremont	3.49	11/21/2023	
Little Sioux Maple	Monona	18.88	11/30/2023	
Marshalltown	Marshall	9.08	11/3/2023	
Muscatine	Louisa	27.45	11/10/2023	
Plum Creek	Fremont	4.74	11/21/2023	
Tama Levee	Tama	2.78	11/14/2023	
Two Rivers Lower	Des Moines	10.72	10/12/2023	
Total Miles:		96.29		

The IGS has identified the levees that will be the subject of qualitative engineering assessments in the future. Approximately 50 miles have been set aside for levee districts that have submitted funding applications to the Iowa Levee Improvement Fund. One of the conditions for funding is the completion of a levee survey. By maintaining this buffer, the OLS can guarantee that applicants can receive timely surveys, thereby accelerating the funding process and preventing unnecessary delays. Please refer to the attached spreadsheet, which lists the levees that have been identified for future surveys.

Future IGS Levee Survey List						
Levee	County	Miles	Date Completed			
Allen Creek Levee 1	Pottawattamie	9.86	TBD			
Allen Creek Levee 2	Pottawattamie	12.59	TBD			
Missouri Valley Levee	Pottawattamie	7.33	TBD			
L-611-614-MoRiv LB & Upr Pony Creek LB & L1B LB	Pottawattamie	21	TBD			
L-611-614 – Upper Pony Creek LB & Lat 1B RB	Pottawattamie	2.29	TBD			
L-624 MoRiv LB & Indian LB & Mosquito Creek RB	Pottawattamie	8.86	TBD			
L-624-627-611-614 – Mosquito Cr & Upper Pony Cr	Pottawattamie	7.39	TBD			
Mosquito Creek Tieback	Pottawattamie	0.51	TBD			
Sioux City – Big Sioux River	Woodbury	1.56	TBD			
Sioux City – Floyd River LB	Woodbury	3.87	TBD			
Sioux City – Floyd River RB	Woodbury	5.37	TBD			
Sioux City - Perry Creek Left Bank	Woodbury	0.25	TBD			
Sioux City - Perry Creek Right Bank	Woodbury	1.32	TBD			
Little Sioux & Wolf Creek	Monona	22.4	TBD			
Ida County (6 segments)	Ida	2	TBD			
Ottumwa, IA - Northside	Wapello	3.67	TBD			

Ottumwa, IA - Southside	Wapello	3.3	TBD
Ottumwa, IA - West End Lower	Wapello	0.48	TBD
Ottumwa, IA - West End Middle	Wapello	1	TBD
Ottumwa, IA - West End Upper	Wapello	0.62	TBD
Eddyville, IA	Wapello	2.98	TBD
Marengo	lowa	4.5	TBD
Decorah- LB	Winneshiek	1	TBD
Decorah- RB	Winneshiek	2	TBD
Luther College	Winneshiek	1.1	TBD
Elkader	Clayton	0.32	TBD
Guttenberg	Clayton	2	TBD
Volga (2 segments)	Clayton	1.25	TBD
Elkport	Clayton	0.53	TBD
Vanman	Pottawattamie	7	TBD
Rand Peterson	Harrison	20	TBD
McFerrin Levee	Harrison	5	TBD
Modale Levee	Harrison	2	TBD
Total Miles			
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Future Initiatives

The OLS has made significant progress this year, but there are still tasks to be completed. In the upcoming year, the OLS plans to continue publishing *The Levee Connection* newsletter and schedule five to six Town Hall Recaps to engage with levee sponsors. These meetings will provide updates and facilitate ongoing discussions about their concerns and needs.

Furthermore, we are committed to developing a statewide educational initiative for levee districts, with a focus on best practices, communication, collaboration, and potential resource sharing. This initiative may take the form of a larger statewide conference, regional workshops, or partnerships with the USACE and other organizations.



Gator UTV with EM geophysical unit parked on a levee

Communication and outreach will continue to be a priority for the OLS. General education to the public will be an integral part of future communications. Many lowans have questions about what a levee is and why they are vital to their communities. By addressing these questions through educational initiatives, we can enhance our understanding of levees and their vital role in Iowa's flood management strategy.

The OLS is engaged in efforts to standardize levee financial data and implement any necessary improvements to the Levee Rating System. As the first wave of applicants for the Iowa Levee Improvement Fund is processed, the OLS will refine the application and funding procedures to ensure efficiency and effectiveness.

The OLS will continue to collaborate with the IGS as we refine the levee survey concept and plans. Data must be collected, stored, and analyzed in order to develop effective rating and project development processes. The success of our program hinges on the collective efforts of all stakeholders.

Finally, as Iowa remains a pioneer in levee safety nationally, we will continue to strengthen relationships at both the national and local levels. This will help build trust, capitalize on cooperative opportunities, and enhance our own educational initiatives surrounding levee best practices and challenges.

Conclusion

The OLS has undergone significant changes in the past year, with notable achievements and a continued dedication to enhancing levee safety across Iowa. Our dedicated team has successfully implemented the Levee Improvement Fund and developed a comprehensive Levee Rating System to prioritize funding based on need and protective capacity. By implementing comprehensive outreach initiatives, we have established transparent communication with stakeholders and elevated public awareness of levee-related matters.

The ongoing collaboration with key partners has been instrumental in developing a unified approach to flood risk management. By collecting and analyzing financial data from levee districts, we have identified areas for improvement and standardized reporting processes to provide more accurate and useful information for future funding decisions.

As we look ahead, our primary objective will be to continue providing education and outreach to both levee districts and the general public. This will include initiatives to enhance comprehension of levee operations and their vital function in protecting communities. We are committed to continuous improvement, leveraging data-driven insights to enhance our initiatives and reinforce our response to flood events.

Iowa is pleased to be at the vanguard of levee safety initiatives in the United States. We will continue to leverage our pioneering status to build trust, foster collaboration, and develop innovative solutions that enhance the resilience of our levee systems. Together, we are not only addressing the challenges of today but also establishing a robust foundation for a safer, more secure future.