

Lee County's Floodplain Management Program: Post-Hurricane Ian Compliance

Lee County, Florida, has been a participant in the National Flood Insurance Program (NFIP) for 40 years, joining the Community Rating System (CRS) over 30 years ago and achieved a Class 5 designation in 2007, a classification which has earned the County and its residents cost benefits. Under the CRS, communities are required to undertake specific floodplain management activities that exceed the minimum standards of the NFIP. These actions are designed to improve public safety, build community resiliency, and encourage a proactive approach to floodplain management. Lee County has demonstrated continuous compliance with CRS requirements through various county initiatives, including enhanced public information campaigns, rigorous enforcement of building codes, and implementation of local floodplain management regulations.

The arrival of Hurricane Ian on **September 28, 2022**, posed an unprecedented challenge to Lee County's disaster preparedness and response frameworks. Striking near Cayo Costa as a strong Category 4 hurricane, Ian brought fierce winds, torrential rains, and a destructive storm surge that tested the limits of the county's flood management systems. The hurricane resulted in widespread destruction across Lee County, damaging over a third of the region's structures and severely disrupting life and property. Lee County's immediate response involved assessing the damage and coordinating recovery efforts throughout the vast 1,212 square miles that host over 800,000 full-time residents, 200,000 part-time/seasonal residents, and countless vacationers. It became the third-costliest hurricane in United States history, causing an estimated \$112.9 billion worth of total damage.

This catastrophic event underscored the critical importance of Lee County's continued adherence to NFIP and CRS standards. Hurricane Ian challenged the community to not only respond effectively in the moment but to also navigate the complex process of recovery and rebuilding while maintaining compliance with federal, state, and local floodplain management requirements. The actions taken by the Department of Community Development (DCD) staff aimed to facilitate a swift recovery while reinforcing the County's commitment to resilience against future floods. FEMA's determination of noncompliance with the NFIP minimum standards, and the resulting decision to

retrograde Lee County's CRS classification to Class 10, incorrectly implies a failure to enforce floodplain management standards effectively, particularly in permitting and documentation for construction and repairs in Special Flood Hazard Areas (SFHAs).



Figure 1. Satellite image of Hurricane Ian over Florida on September 28, 2022; NOAA.

It is important to contextualize FEMA's findings within the broader scope of the disaster's impact and the County's resource limitations during this period. The extensive damage and the immediate need to provide shelter, reallocate staff, and oversee extensive repairs may have obscured the County's transparent efforts to demonstrate full compliance with NFIP and CRS standards. Moreover, the County's extensive and ongoing communication with FEMA and state officials throughout recovery demonstrate a continuing commitment to compliance, process improvement, and public safety.

Community Damage Assessment / Initial Response Period

In the days following the devastating impact of Hurricane Ian, Lee County quickly pivoted to assist with immediate recovery and rebuilding efforts that were carefully aligned with the NFIP and CRS requirements. Understanding the magnitude of the disaster, County officials promptly directed staff in several critical activities to support the community's recovery.



Figure 2. Hub activity at the Emergency Operations Center; Lee County.

Immediate Response

The County initiated Urban Search and Rescue (USAR) missions in the early morning of **September 29**, beginning the initial damage assessment process to evaluate Hurricane Ian's impact on infrastructure and life. Staff from Lee County's Department of Emergency Management and Department of Transportation traveled to evaluate the status of roads, bridges, and essential drainage systems. Meanwhile, first responders were dispatched to answer over 750 fire and EMS calls received during the storm. It was during this time many areas of Lee County were found to be inaccessible. 98% of Lee County was without electricity; both the Sanibel Causeway and roadways through Matlacha to reach Pine Island were reported to be impassable, along with dozens of others across the county. Hundreds of structures along Lee County's coasts were being reported as destroyed by USAR. The focus during these first hours and days was to save lives, identify what areas of the county remained accessible, and prioritize where emergency resources were needed.

The immediate priority for Lee County's Department of Community Development (DCD) was to begin assessment on the severity of infrastructure damage and property conditions. In preparation to conduct the extensive assessment, DCD created a damage assessment team that included all Building Inspectors and Code Enforcement staff. Given that Hurricane Ian was expected to have impacted almost all of Lee County's nearly 400,000 known structures, the task of conducting detailed and accurate damage assessments became considerably more complex and time-consuming than what the 15 Code Enforcement Field Staff available at the time could possibly handle. It



Figure 3. Matlacha Bridge damage taken on September 29; FDOT.

was recognized that the limited number of trained personnel would impact the speed and efficiency of the surveys, particularly given the scale of destruction. In response, about 45 additional staff familiar with disaster response activities and damage assessment procedures were supplemented from other departments and Army Corps mutual aid to assist with handling the workload. The work of USAR focused primarily on the islands and their access; the damage assessment teams from Lee County were tasked with surveying unincorporated areas inland, while the impacted municipalities deployed their own teams.



Figure 4. Damaged residential neighborhood within a SFHA located off Summerlin Road on September 29; Lee County.

Initial Recovery and Community Damage Assessment

When roads finally became accessible, the damage assessment teams were directed to begin documenting the damage, initiating the recovery phase in Lee County. There are over 65,000 structures located across the 150,000+ acres (30% of Lee County) that are included in the SFHA - the sheer volume of required assessments prompted DCD staff to begin as soon as personnel became available. **On October 1**, thirty trucks were dispatched to complete high-water surveys and assess minor/major/destroyed structural damage in accordance with FEMA guidelines. The extensive infrastructure damage hindered access to the most affected areas, delaying parts of the assessment process as reaching and inspecting each property within the SFHA became logistically challenging, if not impossible. Rapid response of emergency resources were deployed in areas inaccessible by DCD staff to ensure immediate needs were met. It was expected ongoing support resources would be prioritized in these areas as excessive damage within them was anticipated.

Following FEMA guidelines, Lee County sought to complete Initial Damage Assessments (IDAs), which are windshield assessments conducted as an inspection designed to evaluate external damage and compliance from a safe distance. IDAs are critical evaluations conducted to quickly estimate the extent of the damage inflicted on an area. They are crucial for streamlining the damage assessment process and part of CRS compliance under Activity 510: Floodplain Management Planning. The goal of an IDA is to gather accurate information that can be used to prioritize emergency response and recovery operations, and inform the public and local government officials about the scale of the damage. The IDAs for structures located in the SFHA served as a critical piece of information used to trigger the evaluation of potential Substantial Improvement (SI) or Substantial Damage (SD). Due to the extensive damage across the county, Lee County opted to notify property owners of the requirements to get permits and conduct SI/SD determinations at the time of permit application utilizing IDA information, an option allowed under FEMA NFIP guidelines (*FEMA P-758 SI/SD Desk Reference, 2010, Section 7.5*). To supplement this process, County staff routinely drove through affected areas to identify unpermitted construction work, issuing dozens of violation notices and Stop Work Orders weekly. In addition, other entities such as police and fire, knew to report on activities that may not be authorized by permit.



Figure 5. Snapshot of Damage Assessment Training on Oct. 2, 2022; Lee

during initial response as it allowed staff to move quickly to ascertain access and damage prior to further action. The information collected by the damage assessment teams was imperative for officials located at the Lee County Emergency Operations Center (EOC), as it helped establish boundaries of the most impacted areas and to determine where resource points of distribution (PODs) should be located. Amidst these crucial activities, DCD staff found themselves grappling with the reality that their own building had experienced 2 feet of flooding. This situation underscored the resilience and dedication of staff as they balanced emergency response tasks with the need to assess and address the damage to their own work environment.

Expedited Permitting

To facilitate the rebuilding process, Lee County set up temporary permitting locations, including one in Downtown Fort Myers and another to help on-island residents at the Pine Island Library. The downtown Lee County permitting office was the first to open in the area on **October 5** (one week after impact); extended hours were implemented, open 7 days a week, with the 16 staff members each working over 25 hours of overtime per week to help residents recover. These centers provided essential services such as permit intake, issuance, and plan review - all aimed at speeding up the recovery process for affected residents and businesses. The second phase of the County's Disaster Recovery procedures (about two weeks after impact) extended permitting, review, and inspection services to all record types regardless of damage, while making sure those with hurricane damage were given priority. This initiative corresponds with CRS guidelines under Activities 330 (Outreach Projects) and 430 (Higher Regulatory Standards), which establish that rebuilding efforts were conducted within the framework of enhanced floodplain management practices to prevent future flood damage.

Understanding the urgent need for rebuilding and repairs, Lee County streamlined its permitting processes, a direct response aligned with CRS Activity 430, which focuses on maintaining and enforcing higher building regulations for new construction and improvements in the SFHA. To support recovery, DCD staff implemented an expedited permitting process to manage the high volume of applications efficiently and fees were waived for all permits filed for hurricane-related damage. Not only did this fee waiver reduce the financial burden for those impacted, but it was also an attempt to reduce barriers for applicants applying for permits. Licensed Plan Reviewers, experienced in

While conducting assessments, recovery staff were also identifying and documenting potential violations of Lee County Ordinances and the Land Development Code, and reporting unlicensed contractors to the State of Florida's Department of Business & Professional Regulation (FL DBPR). These enforcement actions were taken to proactively limit dangerous unpermitted work. Cases could only be initiated based on visible non-compliance from public rights-of-way while maintaining the safety of the team. This requirement is a standard of operation that was heavily reinforced due to the extensive flooding and electrical damage sustained within neighborhoods. The IDA surveys had taken priority



Figure 6. Temporary permitting location in downtown Fort Myers; Lee County DCD.



Figure 7. Press conference hosted at the Emergency Operations Center during recovery; Lee County.

floodplain management, were stationed at permit intake locations to help with technical review of each project and help the applicant develop a scope of work to maintain compliance during the submittal process. On average, it took intake pairs 30 minutes to complete a session with an applicant. In a commitment to maintaining NFIP compliance and CRS participation, Lee County also streamlined the process for evaluating whether rebuilding efforts met the requirements set by the NFIP. When inputting case information into the permit tracking system (Accela), staff were required to check and confirm the elevation of the structure (a mandatory field) before being allowed to approve a permit. Certified Floodplain Managers (CFMs) were also serving along frontline staff to assist with permit documentation and completion requirements.

Permitting staff were trained to utilize incoming data from the IDAs to supplement their review. National Oceanic and Atmospheric Administration (NOAA) aerial imagery of Hurricane Ian's aftermath (captured Sept. 29-30, 2022) was provided during this time. While effective in capturing the immense destructive nature of the event, the use of aerial imagery for the purposes of locating specific structural damage was not proven to be as effective as reports coming in directly from the field. Instead, by combining IDA data with available aerial imagery, staff could visually assess the parcel where the structure is located and its surrounding environment. This enhanced process served as a crucial double-check during permit reviews, particularly for verifying if proposed projects were near areas significantly affected by the disaster. However, the Lee County Property Appraiser's office cautioned against relying solely on aerial imagery to generate enforcement actions, stating, "the use of aerial imagery to generate enforcement actions would be a seriously flawed approach, not least due to the serious equity concerns that using a single day snapshot would create, as well as the infeasibility of accurately evaluating by human review the volume of parcels potentially affected by Hurricane Ian."

These reviews were particularly detailed, aiming to verify that all mitigation and elevation-related requirements were strictly adhered to in alignment with FEMA and County regulations. Special attention was also given to checking parcel Elevation Certificates, a key element to determining if existing structures conform to floodplain management standards. This allowed for a focused assessment of risk and regulatory requirements relevant to those locations. By conducting detailed evaluations and requiring conforming or compliant Elevation Certificates, the County confirmed that all reconstruction within the SFHA met or exceeded required floodplain management standards. IDA insights also went on to help staff identify neighborhoods that required more intensive outreach about permitting requirements and the critical Substantial Improvement/Substantial Damage (SI/SD) regulations.

Ongoing Recovery and Mitigating Activities

Following the disaster, Lee County continued to actively engage in several coordinated efforts to manage the aftermath and support the recovery process. In accordance with FEMA and Centers for Disease Control and Prevention (CDC) guidance, including the *Homeowner's and Renter's Guide to Mold Cleanup After Disasters* and the FEMA Fact Sheet "Prevent Mold from Becoming a Secondary Disaster", an **October 10** public broadcast from the County encouraged households to remove affected furniture and compromised drywall to limit mold exposure. This guidance was given to prioritize the safety of residents and to minimize the growth and spread of mold as much as possible after the flood. Beyond the public health risks associated with prolonged exposure to mold, it was also necessary for owners to protect their property from further damage and follow the requirements of flood insurance policies. Per FEMA and NFIP guidelines (www.FloodSmart.gov), standard flood insurance policies will not cover mold damage when a policyholder fails to take reasonable action within their control to prevent the growth and spread of mold.

The rapid removal of damaged housing materials, carpet, personal belongings, storage from garages and sheds (including paint and other hazardous waste), and vegetative debris resulted in unusually high volumes of curbside waste - 50 times greater than during standard operation one year prior. Aerial photography captured by the Lee County Property Appraiser, as well as aerial photography from other agencies, depicted debris and waste. However, since this curbside waste was comprised of a wide range of materials - household garbage, wind-blown debris from other neighborhoods and properties, and illegal dumping in addition to any construction materials - the presence of debris identified in the field or its representation in aerial imagery was found to be insufficient for the purpose of indicating structural damage. With ongoing recovery activities occurring at such a large scale, updated guidelines were quickly disseminated to teams in the field on how to communicate remediation expectations with residents, when possible, to remind them of protocol. Following these strict processes forced staff to sometimes deliver difficult information to property owners anxious to rebuild, yet was an essential safeguard to ensure recovery activities remained compliant with local laws designed to promote safety and resilience in rebuilding efforts.

Due to the overwhelming size of the disaster and recovery efforts, the County submitted multiple resource requests and calls for mutual aid to garner additional support from State and federal partners to assist with managing the scale of the event. Each request was often followed by a response that indicated all available resources were exhausted, citing critical statewide damage that limited the aid Lee County could receive although it sustained the most extensive damage. **By October 12**, about two weeks after impact, early damage assessment counts had identified 24,585 damaged residential structures and 4,690 commercial structures reporting damage, a property loss estimated to be at least \$3.22 billion.



Figure 8. Photo taken of damage near San Carlos Island; Lee County.

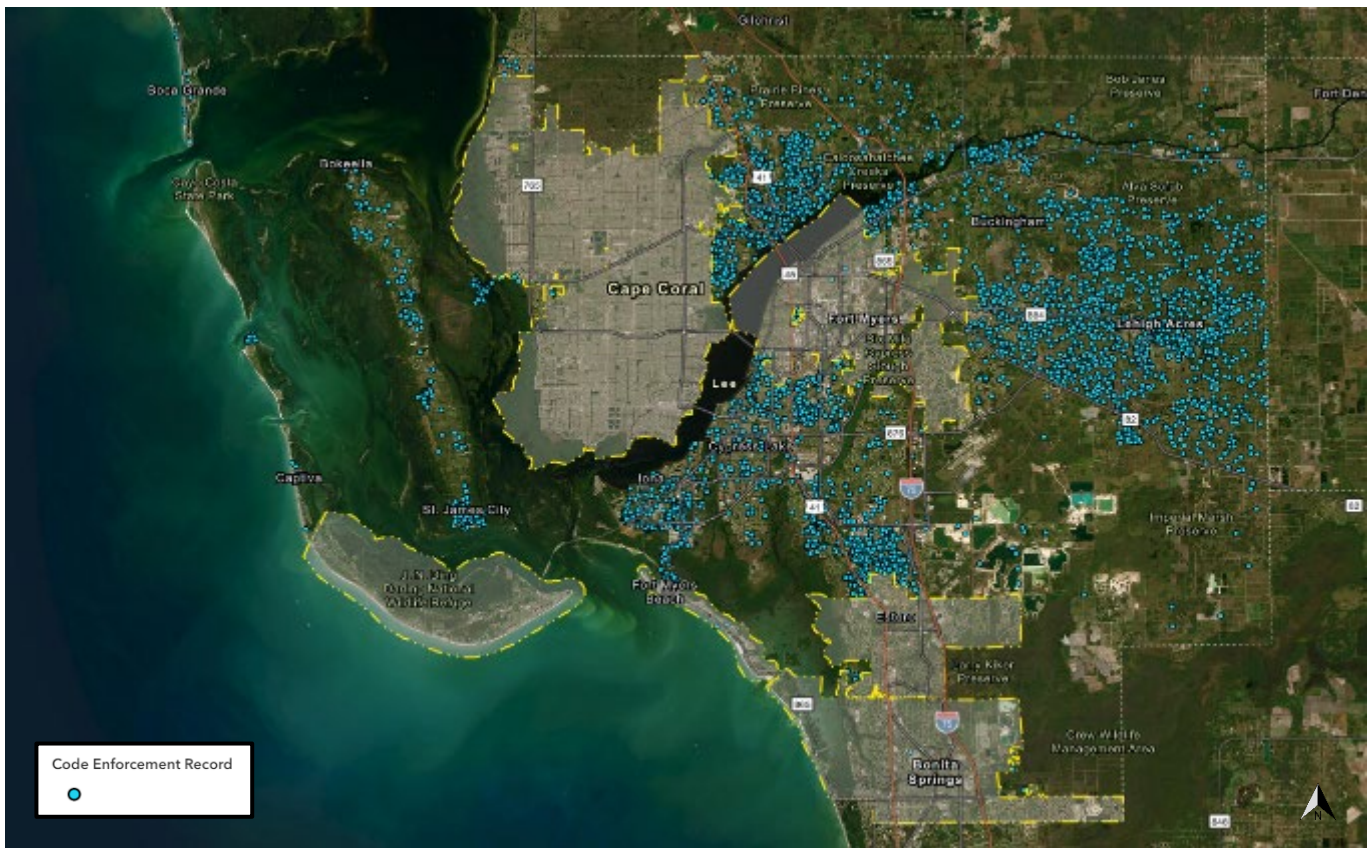


Figure 9. Map of code enforcement violation locations during 1-year period following Hurricane Ian; Lee County DCD.

The sheer volume of rebuilding prompted DCD to request supplemental staff through external public and private partners. The Building Officials Association of Florida (BOAF) was able to respond by sending two inspectors from Hillsborough County for one week in December 2022 and two weeks in January 2023. Throughout this period, inspectors attempted to maintain next-day scheduling (their operational standard). Lee County was able to hire eight temporary personnel to help with permitting, contracted with CAP Government to acquire five Building Inspectors when they became available, and worked with Joe Payne, Inc. (JPI) to utilize a highly qualified licensed Plan Reviewer. Employees of DCD not previously assigned disaster recovery roles were preparing to reopen to standard operation, with all employees indefinitely authorized to work an unlimited amount of overtime each week to handle the increase in work volume while additional calls for mutual aid remained unfulfilled.

By March 2023, six months after impact, demand for repairs/replacements caused by the hurricane drastically increased as funding became available to homeowners. Through the increase, DCD staff remained steadfast in their methodical approach to permit processing and its inherent verification to include SI/SD cost estimates and elevation information. Additional oblique aerial imagery of Hurricane Ian’s impact was captured by Pictometry and provided to the Lee County Property Appraiser in October 2022 but was not an effective tool for helping to determine SI/SD estimates. The aerials could also not be used to corroborate the extent of reconstruction activities as curbside debris could not be significantly attributed as construction material, as previously discussed. This was particularly true given the extensive mold-related removal activities and simultaneous clean-up of vegetative debris occurring during the period when the images were taken. In addition, by the time the aerial imagery was available, most of the scenes depicted had changed significantly and the information was difficult to field verify. However, these aerials remain a useful tool for communicating potential construction-activity concerns with property owners and researching permit requirements.

During this initial six-month period, over 30,000 permits were issued, with over 15,000 permit applications actively being processed, and another 6,000 waiting to be received. Dozens of violation notices and Stop Work Orders were

being issued each week to property owners whose work being performed exceeded the scope of the work approved under their permit. Staff during this period were handling over 800 phone calls, 1,300 emails, and 150 lobby customers per day. The Lee County Board of County Commissioners (BoCC) approved 11 new positions and allowed for automating certain permit workflows (demolitions and partial roofing permits) to speed up processing. This strategic deployment of resources and augmentation of standard processes had been instrumental in addressing the immediate safety concerns and laying the groundwork for the ongoing rebuilding efforts.

Development Standards and Operations that Facilitate Recovery

As the initial crisis began to stabilize, Lee County shifted its focus toward long-term recovery and rebuilding. This effort was characterized by a series of structured initiatives aimed at ensuring all reconstruction activities adhered to the stringent requirements of the NFIP, and the higher regulatory standards of Lee County and the CRS program. Central to these efforts was the transparent and efficient handling of permitting processes, crucial for expediting the rebuilding of damaged structures within compliance frameworks. In accordance with CRS guidelines, Lee County also maintained its public outreach goals to educate residents about regulations for rebuilding and making its resources readily available. These activities underscored the County’s commitment to a recovery process that was not only about rebuilding what was lost but strengthening the community’s overall flood management and preparedness for the future.

Public Outreach

Recognizing the importance of keeping the community informed and engaged, Lee County quickly conducted extensive outreach efforts. Information regarding rebuilding regulations, flood insurance requirements, and available assistance was disseminated through various channels. This adherence to CRS Activity 330 (Outreach Projects) established the expectation that residents were well-informed about the safest and most effective ways to rebuild, thereby fostering a resilient recovery. Immediately post-storm, Lee County departments began internally issuing regular updates via email to staff, many of whom had been dispersed to work on temporary assignments. These communications provided staff with essential instructions and reminders for conducting damage assessments, including scheduling team meetings focused on damage assessment strategies. On October 10, 2022, and January 19, 2023, Lee County issued media releases outlining building damage assessment, permit, and inspection guidelines, and operational adjustments to assist residents post-Hurricane Ian. These announcements were critical for informing the public about how to proceed with rebuilding efforts while adhering to required regulations.

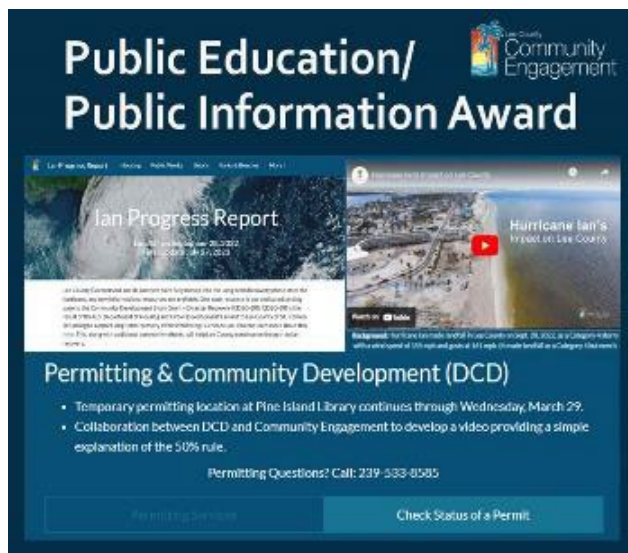


Figure 10. Lee County wins award for the Ian Progress Report GIS hub site; Lee County.

The CRS guidelines require communities to engage in activities that exceed the basic requirements of the NFIP. To support ongoing CRS compliance, Lee County also continues to develop enhanced Geographic Information System (GIS) tools that simplify use and access for both the public and staff, making critical floodplain data and mapping tools readily available to encourage informed decision-making and community engagement in flood risk management. Lee County adheres to the CRS 300 series by providing extensive information about flood risks to the public through multiple channels, including printed materials, public outreach campaigns, and digital platforms. The exemplary efforts with which Lee County responded through public media and outreach campaigns gained national recognition, including winning the Public Education/Public Information Award at the Florida 2024 Governor’s Hurricane Conference (Figure 10). Lee County

makes its flood maps, updated in line with FEMA guidelines, publicly accessible and provides a variety of additional resources and detailed explanations to enhance transparency and assist the community in understanding each element. The CRS 400 series similarly emphasizes the importance of maintaining updated floodplain maps, encouraging the enforcement of local building regulations, and ensuring all the relevant materials continuously remain available to the public.

Lee County provided detailed information on its website about the types of work requiring permits and the documentation needed to support permit applications. This included flyers with guidance on submitting detailed cost estimates for projects close to the 50% threshold for SI/SD, which is a critical factor in determining whether a structure must comply with current floodplain management regulations. In the aftermath of Hurricane Ian, Lee County recognized the urgent need for residents to begin recovery and rebuilding efforts. However, the County also had to balance this urgency with ensuring proper permitting and compliance with floodplain regulations. To navigate this challenge, the County made concerted efforts to provide clear guidance to residents about when permits would be required based on the best information available at the time.

Through various communications, Lee County clarified the requirements for substantial damage assessments and the need for permits when the scope of repair or reconstruction extended beyond initial allowances. For instance, an email to DCD staff on October 25, 2022, emphasized the necessity of obtaining a remodel permit if the project scope exceeded what was allowed by trade permits. Lee County's call for additional plan reviewers and building inspectors, as noted in November 4, 2022, and December 1, 2022, documentation (and continued to early 2023) highlighted the ongoing need to increase resources to handle the surge in permit requests. These efforts were further supported by deploying inspectors from neighboring counties and recruiting private contractors to ensure there were sufficient personnel to handle the workload and maintain compliance, each of whom had to be properly vetted and trained in Lee County practices to operate effectively.

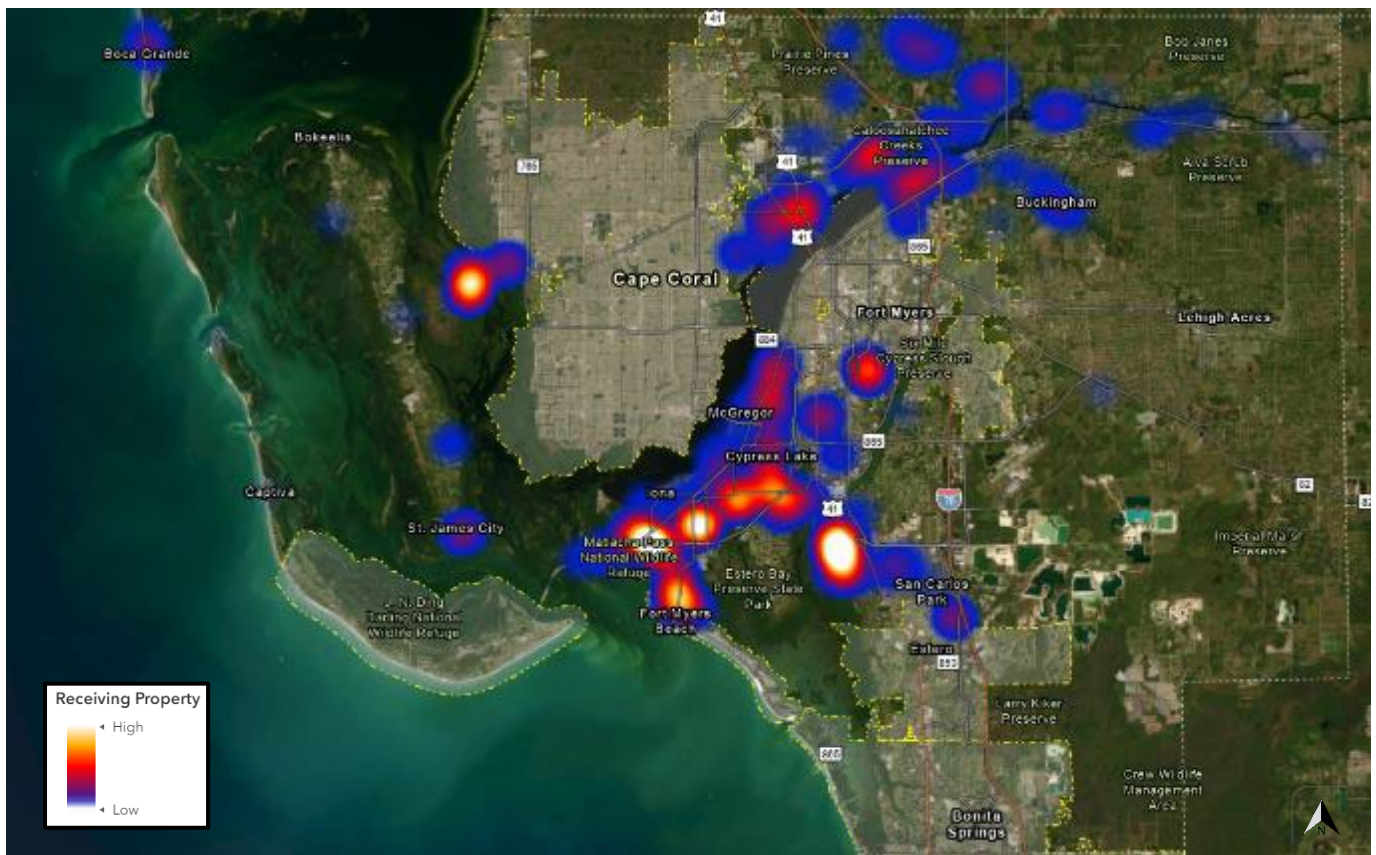


Figure 11. Heat map of residences located in Rep Loss areas who were sent post-storm mailings; Lee County.

In response to the disaster, Lee County undertook significant outreach efforts to inform and assist affected residents. In a massive, coordinated effort with Human and Veteran Services (HVS), over 6,200 surveys were conducted by staff going door-to-door within heavily impacted areas. Outreach included engaging with resident households, conducting wellness checks, leaving behind pertinent information including guidelines on SI/SD determinations (“the 50% rule”) and who to contact for permitting assistance. The annual Repetitive Loss information mailers were sent to over 12,000 households located in impacted areas, detailing critical information for residents in flood zones (Figure 11).

Additionally, in December 2023, a pivotal letter regarding SI/SD determinations was sent out as a reminder to known impacted areas. This letter was distributed to over 6,200 households and outlined the necessary compliance measures for properties significantly damaged or improved, ensuring residents were informed of their responsibilities under local and federal floodplain management laws. These outreach initiatives were crucial in maintaining communication within disaster-impacted areas, reminding them of contact points and guiding them through the recovery process, to facilitate compliance with critical safety regulations.

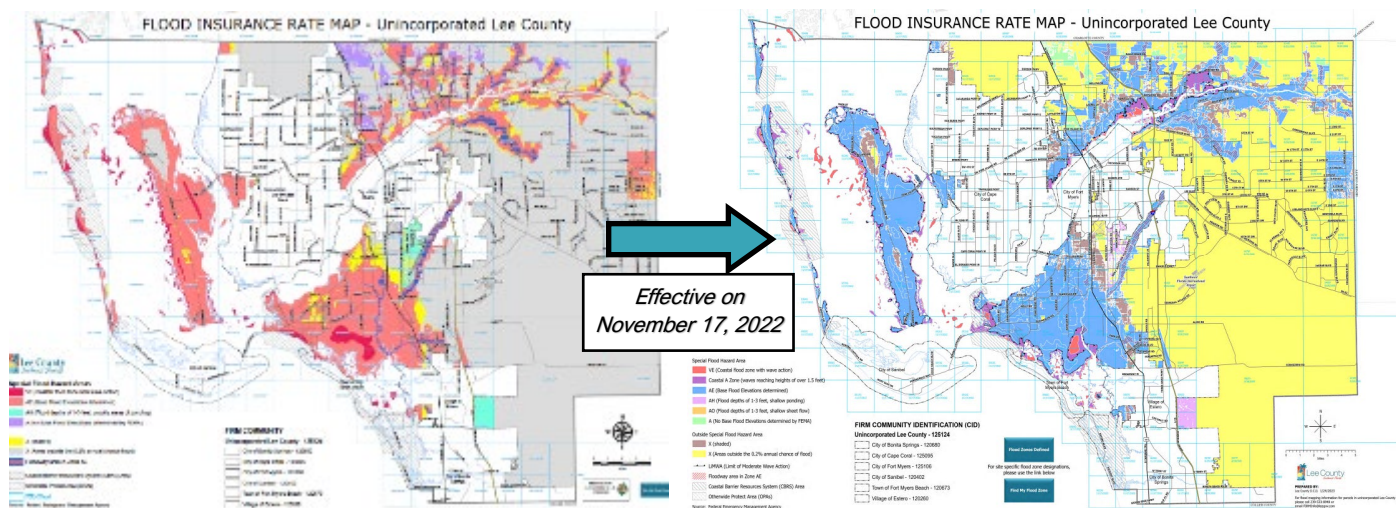


Figure 12. FIRM changes that occurred on Nov. 17, 2022, were captured and hosted on Lee County’s website; Lee County GIS.

The new Flood Insurance Rate Maps (FIRMs) in Lee County became effective on November 17, 2022, less than 8 weeks after Hurricane Ian made landfall. These new FIRMS are crucial for managing and regulating floodplain development as part of the NFIP, impacting permitting by requiring recovering homeowners and businesses to adhere to new flood zone and Base Flood Elevation (BFE) standards. These new standards impacted a significant number of buildings, including adding over 3,300 buildings to Coastal A Zones, changing over 8,000 buildings from Zone X in to SFHA, and removing nearly 3,000 buildings from the SFHA. These changes also included over 17,000 buildings experiencing a 2-feet or more BFE increase, and over 2,000 buildings experiencing a 2-foot or more decrease in BFE.

Consequently, all new construction and substantial improvement within updated flood zones had to comply with these altered standards to comply with federal floodplain management requirements. The County recognized the importance of delivering this information clearly and concisely, especially given the vast amount of information being circulated during this period. A designated 2022 FEMA Flood Map Revisions landing page was created on the County’s website to describe the changes that took place, outline the new requirements, preemptively answer immediate questions/concerns, and provide an array of maps and interactive tools for property owners to navigate. Not all municipalities were implementing changes in the same manner as Lee County, which added a layer of complexity and difficulty to public communication. To address this, Lee County’s campaign focused on transparency and directness, aiming to avoid confusion and provide residents with reliable and straightforward information about how the updated flood maps would affect recovery efforts, property designations, and building requirements.

Permitting Process

The permitting process is a fundamental function of Lee County's DCD, embodying its essential role in overseeing construction, upholding safety, and maintaining regulatory compliance within unincorporated areas of the county. The Standard Operating Procedures for permitting in Lee County are structured to maintain a thorough and systematic approach to managing construction and development. All standards and procedures involved during permitting are expected to be diligently adhered to, including during disaster response. The process begins with the submission of a permit application by a property owner or developer, which could typically be done online via the County's digital permitting platform, Accela. This submission should include all necessary documentation, such as site plans, architectural designs, and other relevant details pertaining to the construction project.

Once an application is submitted, it undergoes an initial review to check for completeness and accuracy of the information provided. This sufficiency check is crucial to guarantee that all required documents are in place and correctly filled out. If any discrepancies or missing documents are identified, the application is returned to the applicant with notes on what additional information or corrections are needed. Following the sufficiency check, the application moves to the plan review stage, where various departments including zoning, building, flood compliance, and environmental services reviews the proposed plans. This multidisciplinary review ensures that the project complies with all local zoning laws, building codes, and environmental regulations. During this phase, staff also review elevation maps and aerial imagery to assess the flood risk and potential impacts on the proposed construction (Figures 13 & 14). Each department provides feedback or approval, depending on their specific area of focus.



Figure 13. Screenshot of GIS application developed to check parcel elevation; Lee County GIS

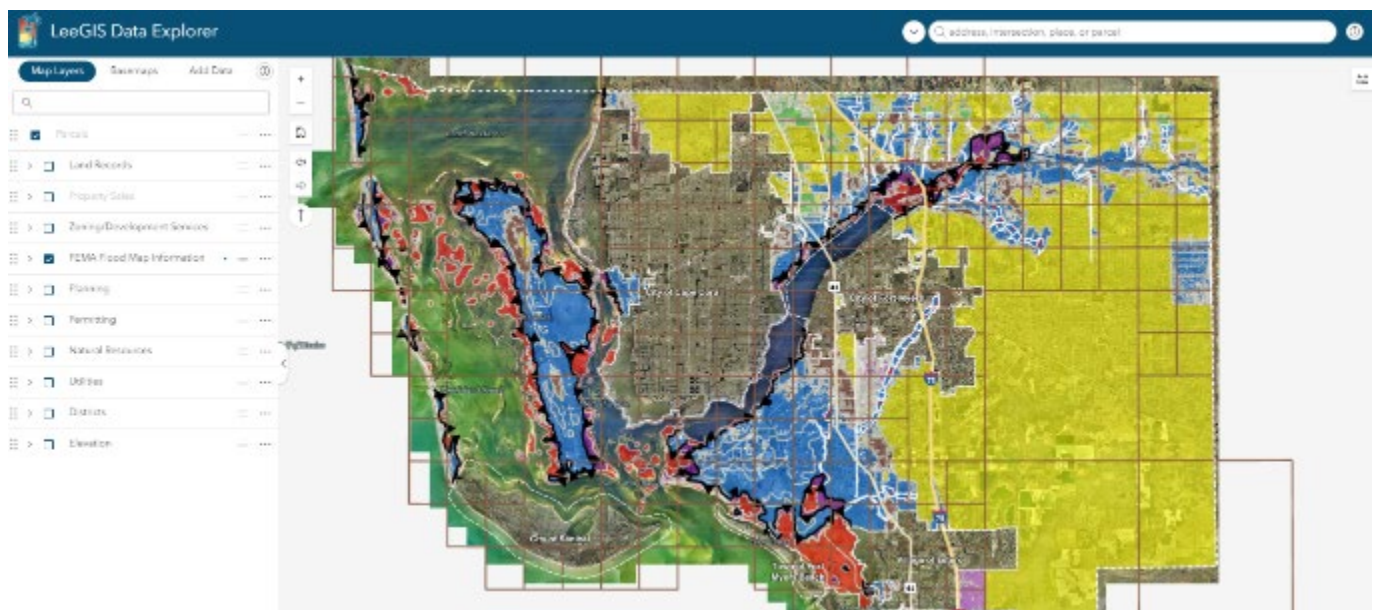



Figure 14. LeeGIS Data Explorer tool commonly used by staff to check parcel data and information; Lee County GIS.

During this phase, floodplain managers would assess the project’s compliance with floodplain management regulations, including checking for appropriate Elevation Certificates - this was particularly important for properties in flood-prone areas. The Accela permitting system is programmed with hard stops (added as “Conditions”) during certain workflows to require additional verifications from management teams prior to permit issuance. For example, prior to Hurricane Ian, conditions were placed on applications when reviewers needed to complete a necessary review, update the required flood-related fields within the record, and communicate with the floodplain management team for a property within a V Zone. During recovery, additional “stops” were put in place to notify the floodplain management team when a new permit was created for a flagged property, such as those within a certain designated flood zone or hazard area (e.g., areas heavily damaged by Ian). This allowed the floodplain management team to assist with monitoring permitting and code enforcement-related activities associated with flagged properties. The process is intended to ensure the proper reviews are completed prior to allowing new permits to be released. These additional flags and conditions placed on workflows were determined to be highly effective; they were made permanent and have since been expanded. This extensive plan review process is a critical step for certifying that new constructions or significant improvements meet the standards required to minimize flood risk, particularly in areas susceptible to flooding. To more effectively facilitate this process, Lee County proactively migrated to the enhanced GIS data explorer shown in Figure 14. This tool better presents the data, improves efficiency, and reduces errors to help staff proficiently identify data issues.

Lee County reviews over-the-counter trade permits using a similar process to the remodel/structural applications. This would include permits for roofs, openings (e.g., windows, shutters, doors), and certain types of plumbing, mechanical, and electrical. These types of permit applications normally do not require licensed plan reviewers to evaluate the project unless it is determined the project requires additional investigation. At that point, it would be escalated to the Plan Review team for a detailed review, as described above. Permitting staff evaluate the trade permit application cost and compare it to the building valuation cost derived from the Lee County Property Appraiser’s site, where the cost breakdown is then provided on the response cover sheet in relation to the 50% threshold. These types of permits also trigger some of the previously mentioned required “stops” within Accela, preventing a permit from moving forward without evaluation and confirmation by the floodplain management team.

			
<p>*2a* Prevents completion of Zoning Review Task as Not Applicable or Approved if:</p> <ul style="list-style-type: none"> • Flood Zone, Flood Compliance Required, or Flood Compliance Method (<i>Custom Fields</i>) are null • Flood Compliance Required (<i>Custom Field</i>) = "Yes" and Flood Compliance Method (<i>Custom Field</i>) = "Not Applicable" • Drainage Plan Req'd (<i>Custom Field</i>) = "Yes" and Drainage Review Condition Status = "Not Applicable" or Condition Missing • Drainage Plan Req'd (<i>Custom Field</i>) = "No" and Drainage Review Condition Status = "Condition Met" • Review Conditions are not completed (<i>Status NOT "Applied"</i>) <p>*2b* Prevents completion of Plan Review Task as Not Applicable or Approved if:</p> <ul style="list-style-type: none"> • V-Zone Design Package and/or V-Zone Design Certificate Conditions are not completed (<i>Status NOT "Applied"</i>) 			
V-Zone Design Package	Required	Plan Review to confirm the V Zone Certificate is provided and the V Zone design is properly reviewed.	<p>Auto-added upon completion of Flood-related Custom Fields, when the values of certain fields are as follows:</p> <ul style="list-style-type: none"> • Flood Zone = VE <p>AND</p> <ul style="list-style-type: none"> • Flood Compliance Method is NOT one of the following: <ul style="list-style-type: none"> ○ <50% ○ Matching Existing Elevation ○ Not Applicable ○ Flood Proofing ○ Flood Proofing Cert ○ Flood Proofing Cert & ElevCert (UC & Final) <p>Script prevents Plan Review (RES) or Building Review (COM) task from being completed as Approved or Not Applicable, if condition status is "Applied".</p> <p>Completing the Condition as "Condition Met" sends an email to FIRMInfo@leegov.com, allowing them to complete the "V-Zone Design Certificate" Condition. Both Conditions must be met, prior to the Plan/Building Review Task being "Approved".</p>

SAMPLE

Figure 15. Sample of advanced scripts used to condition records for additional staff review; Lee County DCD, Accela Team.

If a plan passes all reviews, the applicant will then pay any required fees before the permit can be officially issued (this fee is typically waived during disaster recovery periods, including for Hurricane Ian). Once issued, construction could commence subject to ongoing inspections. Inspectors from the County visit the construction site at various stages of the project to check that work is proceeding in accordance with the approved plans, and that all building standards and regulations are being met. During these visits, inspectors not only verify that work is being completed in accordance with approved plans but are also trained to identify and report any unpermitted work. If they see any work outside the scope of work of the description of the permit, they require the permit-holder to submit a permit revision to properly document and permit all work performed. The revision will then go to Plan Review for approval, and then the inspector will re-inspect the work according to the updated plans/scope. Upon completion, a final inspection is conducted.

If the project passes the final inspection, a Certificate of Occupancy or Certificate of Compliance is issued, allowing the building to be legally occupied or used as intended. This process is further complicated by Florida State law, which allows private providers to conduct permit reviews, inspections, and approvals. While the floodplain management requirements of a project should be part of the private providers purview, it is a constant battle to ensure private providers are aware of these requirements; in response, Lee County operates within the limits of State law and must verify they are adhering to the requirements.

This methodical process ensures a high level of oversight and compliance, safeguarding the integrity and safety of new structures within Lee County. It balances the need for thorough regulatory compliance with the efficiency necessary to support economic development and community growth. It should be noted that during recovery periods certain processes were adjusted, as earlier discussed. A drastic increase in the number of new permits after a major disaster is expected to severely strain normal processes and staffing levels. During Hurricane Ian, for example, the number of permits entering the system more than tripled, prompting fee waivers, expedited reviews, staff overtime allowances, and temporary reassignments. These solutions allowed DCD staff to effectively coordinate an all-hands-on-deck situation while still maintaining regulatory compliance. Constant intradepartmental communication and collaboration was essential to strike this balance and help the community move forward through recovery.

Substantial Improvement/Substantial Damage (SI/SD) Determinations

In Lee County, the process and requirements for determining SI/SD projects are crucial components of the County's floodplain management strategy, designed to ensure that buildings are safe and resilient against future flood risks. The SI/SD determination is particularly important for properties located within the SFHA, where the risk of flooding is higher. According to Lee County regulations, a structure is considered "Substantially Damaged" or "Substantially Improved" if the cost of restoring the structure to its pre-damage condition (or the cost of the improvement) equals or exceeds 50% of the market value of the structure before the damage or improvement occurred. **This is known as the 50% Rule.** When a building in the SFHA is damaged or when an owner proposes improvements, Lee County requires a detailed assessment to determine if the proposed work meets the threshold of substantial improvement or if the damage incurred qualifies as substantial damage. If either condition is met, the structure must be brought into compliance with the current floodplain management regulations, which often involves elevating the building to or above the BFE + 1 foot (freeboard) to reduce future flood risk.

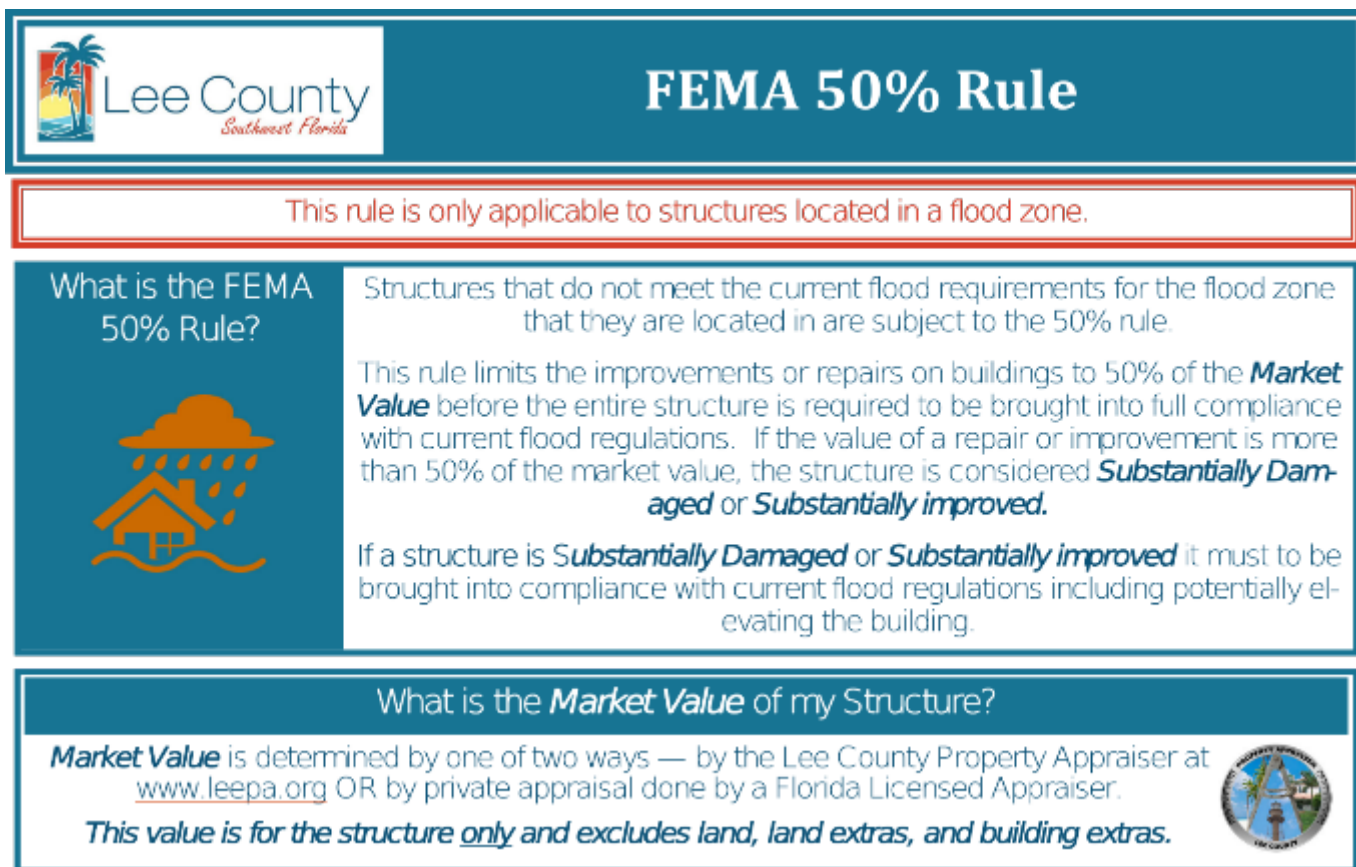
The County facilitates this process by requiring property owners or their contractors to submit a detailed cost estimate when the cost of proposed work is within close range of the 50% threshold. This estimate must include all costs related to the improvement or repair, not limited to structural changes, but also encompassing electrical, plumbing, and mechanical. Lee County Plan Reviewers then review these estimates along with the property's assessed value—excluding land value—to determine if the proposed cost meets or exceeds the 50% threshold. If it does, compliance measures such as elevating the building must be undertaken. Lee County staff used the **Building Valuation Calculation Table** (as displayed on Lee County webpage at time of permit) to help applicants develop their scope of work and estimate the costs for proposed construction or repairs. This process involves multiplying the standardized cost per square foot by the area of the proposed construction or repairs. Valuations for SI/SD

Determinations were posted on the Lee County Community Development website, including additional information on which processes to follow (or how to calculate costs) in special cases.

A construction value of \$60 per square foot (\$60/sf) for Interior Remodel and other enclosed structures was established in 2015 after a recent period of economic stability led to overall stabilized construction and labor value costs. Shortly after Hurricane Ian, the County Building Official allowed a construction value of \$30/sf to be used for minor flood damage of 18 inches or less, consistent with the FEMA *Preliminary Damage Assessment Guide*. The \$30/sf amount was based on the professional expertise of three in-house licensed contractors and information provided from a local licensed restoration company using data generated by Xactimate software, an industry standard. Work over 18 inches that was shown to exceed minor repairs (e.g., work beyond single-layer floor or drywall repairs) utilized the \$60/sf standard that remained in place for determining estimated cost values on repairs.

On January 1, 2024, to coincide with the effective date of the 2023 Florida Building Code, the current County Building Official and Floodplain Administrator updated this to \$85/sf to align with the national average. It is important to note that using the allowed square foot value is only one option for calculating costs. The preferred method is for an applicant to provide a Contractor or Homeowner Estimate of labor using the *Cost Estimate of Reconstruction/Improvement* table on the sheet provided, located within the County's SI/SD **Detailed Construction Cost Breakdown Itemization Package**. Another option for builders is to use the value provided in an appraisal if one is accompanying the permit. The use of the appraisal value for cost of construction for the new work being proposed was a practice implemented on November 1, 2015.

Lee County provided this information and more through weekly public broadcasts, complementing these updates with the extensive resources and direct support available at permitting offices. Staff verified that all necessary documentation, including Elevation Certificates when available, were submitted to substantiate compliance claims. Historic Elevation Certificates could be obtained by contacting Community Development, the primary repository for these records, and submitting these certificates for review. Staff can also work to verify if a structure's elevation is



The image shows a portion of an information sheet with a blue header and white text boxes. The header contains the Lee County logo and the title 'FEMA 50% Rule'. Below the header is a red-bordered box with a warning message. The main content area has a blue background on the left with an icon of a house and rain, and white text on the right explaining the rule. At the bottom, there is another blue header with white text and a circular seal on the right.

Lee County
Southwest Florida

FEMA 50% Rule

This rule is only applicable to structures located in a flood zone.

What is the FEMA 50% Rule?

Structures that do not meet the current flood requirements for the flood zone that they are located in are subject to the 50% rule.

This rule limits the improvements or repairs on buildings to 50% of the **Market Value** before the entire structure is required to be brought into full compliance with current flood regulations. If the value of a repair or improvement is more than 50% of the market value, the structure is considered **Substantially Damaged** or **Substantially improved**.

If a structure is **Substantially Damaged** or **Substantially improved** it must be brought into compliance with current flood regulations including potentially elevating the building.

What is the Market Value of my Structure?

Market Value is determined by one of two ways — by the Lee County Property Appraiser at www.leepa.org OR by private appraisal done by a Florida Licensed Appraiser.

This value is for the structure only and excludes land, land extras, and building extras.




Figure 16. Portion of information sheet distributed about SI/SD and the 50% Rule; Lee County Community Development.

found to be complying during the review process by proactively searching for these records themselves if the owner or builder are not sure if an Elevation Certificate had ever been filed for the structure. If found to be non-compliant, staff will then assist applicants on the process required to certify the elevation of their structure. This thorough and systematic approach not only helped maintain the structural integrity and safety of buildings within flood-prone areas but also certified that the community's rebuilding efforts are sustainable and in agreement with federal and local flood management regulations.



Figure 17. Florida Property Owner Guide Storm Guidance for Historic Properties; Florida Division of Historical Resources.

The NFIP gives special consideration to the unique value of designated historic buildings and structures (44 CFR 59.1). Mindful treatment of these structures was noted during recovery when Lee County staff completed site visits with FEMA representatives on October 27, 2022, with a focus on the Matlacha Historic District. Conversations ensued regarding Lee County's policy as established in the Historic Preservation Ordinance (Chapter 22 of the Land Development Code). The definition of "substantial improvement" includes the following exclusion for historic structures: "Any alteration of a 'historic structure', provided that the alteration will not preclude the structure's continued designation as a 'historic structure'." The exclusion applies to historic structures that have been substantially damaged; as provided by this provision, the County is allowed to exempt historic structures from the SI/SD requirements of the NFIP. In these special cases, officials acknowledge the nuanced nature of rebuilding to preserve the integrity of historic structures.

Building Inspections and Code Enforcement

The Lee County Building Inspection team's primary responsibility is to verify that all construction, whether repairs or new construction, complies with local building codes, zoning regulations, and safety standards, including the extra precautions required in the SFHA. Their primary operational goals are to safeguard public safety, health, and general welfare as they relate to the construction and occupancy of buildings and structures. Inspectors work diligently to inspect sites to confirm that builds meet or exceed FEMA's and the County's minimum elevation requirements, and that proper floodproofing measures are implemented where necessary. This enforcement is critical under CRS Activities 430 (Higher Regulatory Standards) and 450 (Stormwater Management). During disaster recovery periods as seen with Hurricane Ian, staff also allow for on-site consultations to take place to support homeowners on their best path to rebuilding. The Floodplain Management team, an integral component of the Building Inspection team, specifically focuses on compliance with floodplain management practices. This team supports the permitting process by reviewing applications for adherence to floodplain regulations, checking for required documentation such as Elevation Certificates, and advising on necessary adjustments to meet or exceed floodplain standards. Elevation Certificates undergo an annual audit by FEMA to confirm CRS and NFIP compliance, requiring a minimum 90% correctness rate for communities to maintain their CRS status. Historically, Lee County has consistently exceeded this standard, maintaining annual correctness ratings above 95%, including a 97% rate in the most recent (2022) audit year.

The Code Enforcement operations, meanwhile, function alongside the building inspection process to manage ongoing compliance with all municipal codes and ordinances. Code Enforcement staff are tasked with identifying, addressing, and rectifying violations of codes that could negatively impact community safety, health, and aesthetics. They operate in coordination with other departments to ensure a holistic approach to compliance and enforcement. Their standard of operation requires photographic evidence to support their casework, an often-restrictive



Figure 18. Code Enforcement staff responding to nuisance accumulation case; Lee County DCD.

requirement bound by legal limitations on how evidence can only be gathered from public rights-of-way. Despite these challenges, the staff remain committed to thoroughness, requiring photographic evidence for each case to guarantee accurate record-keeping and support any potential enforcement actions. The requirement for photographic evidence to support each case aligns with CRS Activity 360 (Flood Protection Assistance), and prioritizing areas with the most severe damage for immediate inspection and case creation adheres to CRS Activity 430 (Higher Regulatory Standards).

Conducting site visits, investigating complaints, and engaging with the community is how Building Inspection and Code Enforcement staff work diligently to maintain the integrity and safety of

the built environment, ensuring that all construction and maintenance work within the County adheres to established legal and regulatory standards. During recovery, it was with the assistance of both the Building Inspection and Code Enforcement teams that recovery within neighborhoods across Lee County was able to be monitored effectively. Staff often work closely with residents to engage and consult when requested, understanding that informal consultations allow builders to proactively address common issues, saving time and mitigating costs. Their familiarity with the areas they visit is what allowed Lee County to actively monitor and be aware of potential unpermitted work. This surveillance led to the initiation of over 5,800 new cases involving potential violations for unpermitted work or suspected building maintenance beyond approved scopes during the recovery phase. Between 65-75% of these cases were opened by staff who observed the work being completed without the necessary permits.

While Building Inspectors went back to standard operations in November 2022, Code Enforcement was tasked with processing demolition permits until April 2023. Community Development needed to allocate their time in this manner due to the volume and deadlines under which the Florida State debris program required for removal from private property. In the aftermath of Hurricane Ian's destructive impact, Code Enforcement staff faced immense challenges navigating neighborhoods strewn with extensive debris from damaged structures to conduct inspections and substantial damage assessments. The County had placed emphasis on not relying on debris presence as an indicator of substantial damage, as NFIP regulations require a more thorough evaluation of all interior and exterior components when calculating repair cost ratios. The presence of debris on the curb does not necessarily correlate with the level of structural damage sustained by a building, as residents may dispose of items for various reasons unrelated to the storm's impact on the structure itself. An example of this can be seen in Figure 19 (right), where homeowners were taking advantage of increased debris



ROW Haul In Collection Detail				
Tuesday, October 11, 2022				
Debris Type	Daily Collection		Project to Date	
	Loads	CYD	Loads	CYD
Vegetation	773	34,991	3,773	179,813
Construction & Demolition (CD)	216	10,880	1,064	55,001
Dirty Sand	140	2,966	288	6,309
All Collection Totals	1,129	48,837	5,125	241,123

Figure 19. North Fort Myers home on 10-3-2022 with sample of debris collection report; Lee County GIS and Solid Waste.

collection and removal by placing large amounts of materials for pickup not necessarily related to construction activity or structural damage remediation. Worth noting, this type of debris material was collected and classified as Construction & Demolition-related for sorting purposes. In the context of Code Enforcement, aerial imagery is not admissible as evidence in Hearing Examiner cases, as it fails to provide the level of detail and specificity required to substantiate violations or support enforcement actions.

Record-Keeping Practice

During recovery, Lee County maintained careful records of all permits issued for development, new construction, and substantial improvements within the SFHA. These records are kept in digital format within official Lee County storage applications to ensure accessibility for verification and future audits. This adherence to documentation is crucial under CRS Activities 320 (Map Information Service) and 510 (Floodplain Management Planning), and made certain that all data regarding floodplain changes, permits issued, and compliance checks were accurately recorded and maintained. Lee County understands the deep implications involved in adhering to the established CRS activities and certifying all recovery efforts are well-documented and transparent. The procedural activities that occurred following the devastating effects of Hurricane Ian allowed Lee County to uphold its responsibilities under the NFIP, aiming for a responsible rebuilding process.

Lee County has implemented diligent record keeping practices using Kwiktag, the County's official document storage application, and EPlan, a web-based application integrated with Accela for storing and reviewing case documents. Kwiktag allows the County to securely store and archive all permitting and development records in a centralized digital repository. It is the primary repository of property Elevation Certificates. Maintaining comprehensive documentation through advanced storage systems like Kwiktag has been critically important for ensuring transparency, historical record tracking, and regulatory compliance in the wake of a disaster like Hurricane Ian. It creates an auditable trail validating adherence to NFIP, CRS and other regulations governing development in flood zones. Beyond just compliance, these diligent record keeping practices help protect Lee County and its residents by mitigating liability risks by thoroughly documenting the full history of structure improvements, damage assessments, and elevation requirements.

Lee County uses the Accela Automation Civic Platform for permit processing and other various activities throughout the development review process. This system is integral in allowing staff complete oversight of all documentation related to building permits, inspections, and code enforcement activities. The system also ensures all data are captured in a timely manner, accurately recorded, and remain easily accessible – each essential for maintaining transparency and accountability across extensive processes. The CRS emphasizes the importance of comprehensive documentation for maintaining high standards of floodplain management. By using Accela, Lee County efficiently tracks and manages permit applications in alignment with Lee County's CRS program activities, which requires detailed record-keeping to monitor and control the alterations in the floodplain. The County's use of Accela also supports the County's CRS program activities by providing a reliable platform for documenting and retrieving data on all construction activities in flood-prone areas.

During the constantly shifting landscape that marked recovery, Lee County staff retained meticulous records of changes that were made to public-facing websites and relayed through media channels. Weekly staff meetings were also introduced to check-in with staff to form common standards for operating procedures while out in the field collecting data. Staff were encouraged to maintain open communication with unit leaders during recovery to alleviate stress and burnout conditions, along with reinforcing support networks when permit documents were ambiguous or required extensive review.

Lee County’s Commitment to NFIP and CRS Requirements

Lee County’s ongoing commitment to the NFIP and CRS is evident through the County’s historic implementation of specific CRS activities designed to enhance community resilience against future flood events, while maintaining compliance with the minimum standards of the NFIP. Over the past 10 years, Lee County has invested more than \$25.8 million on flood mitigation projects, consulting services and the continuing education of Certified Floodplain Managers to deliver high-quality compliance to NFIP and CRS standards. This investment also included hydrologic and hydraulic modeling to ensure the accuracy of FIRMS; the pattern of flooding and storm damage sustained from Hurricane Ian verified that accuracy. This look-back at the actions taken by Lee County and DCD staff in the aftermath of Hurricane Ian exemplifies the County’s dedication to upholding and enforcing building codes and floodplain management regulations that go beyond the baseline standards mandated by the NFIP. Even with the immense challenges posed by the unprecedented scale of the disaster, Lee County has shown its unwavering commitment to ensuring the safety and resilience of its communities by maintaining these higher standards. This faithful adherence to elevated standards stands in contrast to FEMA’s claims that Lee County has failed to enforce the minimum NFIP requirements, highlighting the discrepancy between the County’s actual performance and the federal agency’s final assessment.

During the recovery process from Hurricane Ian, Lee County has been diligent in identifying areas of improvement or gaps in regulations, policies, and procedures that hindered forward progress. The County has strengthened its enforcement of building codes, particularly in the SFHA, aligning with CRS Activity 430 (Higher Regulatory Standards), to ensure that all new construction and major renovations comply with the applicable safety standards. The most effective process augmentations that occurred during Hurricane Ian’s recovery period have been incorporated into current operating procedures, which are continually updated to further refine long-established procedures. Recognizing the limitations posed by insufficient staffing during the disaster response and recovery phases, Lee County is actively exploring strategies to expand its workforce and enhance staff training programs to better prepare for future large-scale emergencies.



Figure 20. Lee County CDBG-DR Action Plan (2023); Lee County.

Monitoring Ongoing Compliance

Over a year and a half after Hurricane Ian's devastating impact, many households in affected areas remain in limbo, unable to proceed with rebuilding or repairs due to delays in receiving reimbursements or funding. One significant bottleneck has been the slow distribution of funds from programs like the Hazard Mitigation Grant Program (HMGP). These delays are largely due to the complex and time-consuming processes involved in approving and disbursing federal aid. As a result, essential work on damaged structures is postponed, prolonging the disruption in the lives of many residents. This situation calls for heightened awareness and sensitivity from officials regarding the challenges and frustrations faced by the community. Officials must recognize the lengthy nature of the rebuilding process and strive to expedite support wherever possible to facilitate recovery and restore normalcy.

To support ongoing recovery, the DCD has sought to improve processing speeds while maintaining the quality of compliance checks throughout each stage of the permitting process in adherence to FEMA guidelines for effective floodplain management. Each step of the permit process now has forced stops and additional notifications in place to ensure staff have appropriately verified SI/SD determinations and elevation record requirements. These checks are put in place to not only maintain oversight over the development process, but to also allow staff to strategically approach efficiency and transparency with the public.

During the construction phase, the department has implemented a thorough inspection regimen. Inspectors are tasked with ensuring that construction adheres strictly to the approved plans; special attention is given to critical phases of construction where floodplain management measures are implemented, such as the installation of flood vents, elevation of utilities, and proper sealing and anchoring of structures. This practice is supported by the issuance of Under Construction Elevation Certificates, which allow inspectors to evaluate the property to verify slab height and foundation work prior to vertical construction, a significant cost-saving measure for builders and owners. During final inspections, the DCD has also established a required check that the project complied with all floodplain management criteria set forth at the beginning of the project. This includes a physical inspection of the site and final review of elevation, earning the property its final Elevation Certificate. Establishing such a review process not only allows development to remain in compliance but also helps the County identify areas where the permitting process could be improved based on the outcomes of completed projects.

Process Enhancement Opportunities

To further strengthen adherence to FEMA guidelines, the department has made it a priority to maintain an open line of communication with the residents and businesses in the community. Lee County has historically led the multi-jurisdictional Program for Public Information, a comprehensive outreach strategy designed to best communicate flood hazard and safety information, and continues to host the Southwest Florida Community Rating System Users Group quarterly meeting, as well as many other FEMA/Florida Floodplain Managers Association (FFMA) trainings sessions. As the third costliest storm in U.S. history and the most severe storm Lee County had ever faced, Hurricane Ian provided key insights into where opportunities for efficiency and improvements can take place. Regular workshops, information sessions, and updated online resources are known to help property owners understand their responsibilities and the importance of compliance with floodplain management practices. This proactive community engagement fosters a collaborative approach to floodplain management and encourages future compliance through better understanding rather than through enforcement actions alone.

Lee County has expanded its public outreach programs, which are part of CRS Activity 330 (Outreach Projects), to educate residents about flood risks and the importance of insurance coverage. Administrative enhancements like designating an experienced Certified Floodplain Manager to provide ongoing floodplain training and expanding the

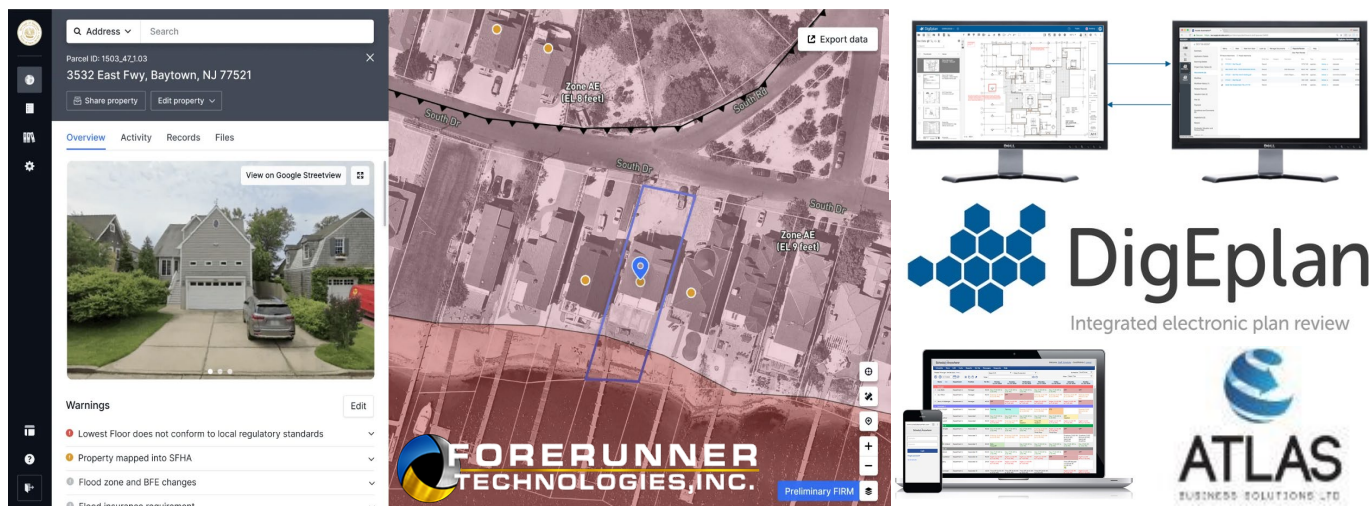


Figure 21. Showcase of new technologies being explored; Lee County Community Development and partners.

County's comprehensive Program for Public Information allows for a proactive approach to community awareness. These programs include workshops, informational campaigns, and the distribution of educational materials that explain the benefits of compliance with floodplain management ordinances. The County is also in the process of reviewing and enhancing all public-facing GIS web mapping tools, including those that allow property owners to check for pertinent safety and recovery resources such as flood zones and evacuation routes, as well as developing multi-lingual outreach materials on flood risks, insurance, and mitigation steps that can be distributed annually. Such initiatives not only help to elevate public awareness but also encourage community participation in preventive measures to help residents through future disasters.

As discussed earlier, the Accela platform is widely used by DCD for managing permit applications, reviews, inspections, and code enforcement activities. When it comes to construction plan reviews, Accela's integration with EPlan software to enable electronic plan submittals and markups significantly improves efficiency and accuracy. The traditional EPlan solution allows contractors and homeowners to electronically submit construction plans and supporting documents directly into the Accela system, allowing for easier access and markups. Lee County is exploring upgrading to the DigEplan integrated solution, which offers greater accessibility, workflow automation, version control, and real-time markup capabilities to help streamline and improve the review cycle even more. This is particularly valuable for complex commercial/residential plans required to meet numerous and varied floodplain regulations.

The Building Inspection and Code Enforcement teams are also in the process of implementing an enhanced mobile field inspection and scheduling solution application like Atlas Business Solutions to supplement their services. Aside from the efficiency it would provide to modernize current workflows during blue-sky days, the intent would be to also provide applicability when staff must conduct extensive field surveys based on NFIP criteria during gray sky periods. While Accela allows for initial inspector scheduling, the Atlas app integration would allow supervisors to effectively manage workloads in real-time by adjusting schedules and redistributing assignments as needed to maintain balance across the team based on changing priorities and field conditions. Using a mobile app with directions and on-site location tracking, inspectors can effectively collect and document detailed damage data while in the field. Further integration with Accela would allow inspection data and documentation collected via the Atlas mobile app to automatically sync to the corresponding record in Accela. The application would allow pertinent information and before-and-after photos to be attached directly to a property case file, ensuring that proper enforcement documentation actions are taken to verify rebuilding activities are compliant. This creates a seamless workflow where field inspectors can complete inspections using Atlas - attaching photos, notes, and results - which then gets instantly uploaded to the property/permit file in Accela.

Another key process improvement involves utilizing new software solutions to modernize and streamline floodplain regulation activities. One such tool is Forerunner, which automates the creation, submission, and review process for NFIP Elevation Certificates. By leveraging Forerunner, Lee County staff could efficiently manage the high volume of elevation documents required in the wake of widespread flooding from Hurricane Ian. The software also has capabilities for automating floodplain determinations and documentation based on map data. Additionally, Lee County will soon integrate parcel data and up-to-date flood maps directly into the Accela permitting systems through a future Accela/GIS joint update. This integration would give permitting staff and reviewers instant access to a property's flood zone status and applicable regulations when applications come in for development instead of having to visit external (from Accela) websites hosted by Lee County's GIS or Property Appraiser team. It creates a seamless review process for ensuring proposed projects meet floodplain management requirements like elevation standards, freeboard minimums, anchoring methods, and flood venting. Having this floodplain data built into the permitting workflow is crucial for consistent enforcement.

Modernization efforts across processes, technologies, and public engagement allows Lee County to exhibit its dedication to expanding floodplain management best practices. By continuing to invest in these crucial activities, Lee County not only works towards retaining a higher CRS classification but also demonstrates a robust commitment to the NFIP framework for disaster preparedness and mitigation that benefits all residents.

Closing Remark

In the last 20 months, Lee County has been an unenviable case study in catastrophic disaster recovery. Serving as ground zero for the third costliest storm in U.S. history, our staff set aside personal and professional losses to focus on the needs of our residents, our businesses, and our community. We expended every resource at our disposal, and when those ran out and requests for assistance went unfulfilled, we found ways to press on. Through this experience, it has become clear that the federal and state regulations, policies, and procedures are not designed for events like Hurricane Ian, and scaling them up to meet the resulting needs and requirements is a herculean challenge; however, it is one Lee County rose to, nevertheless. For months, our staff worked countless hours, 7 days a week, to help our citizens recover, rebuild more resilient, and ensure that the lessons learned from Ian would not need to be relearned during the next storm. In March 2024, Lee County became another case study when we received a phone call from FEMA that our CRS Class 5 would be retrograded based on perceived noncompliance with the NFIP minimum standards, and that the decision was final.

Immediately our staff dove in to determine how this inaccurate conclusion could have been reached. Since the recovery process began, Lee County worked tirelessly with our FEMA and State colleagues to identify damages, document actions taken, and ensure that Lee County regulations were adhered to, which include and exceed both the NFIP minimum regulations and the State of Florida higher regulatory standards. In addition, Lee County utilized our CRS-recognized processes and procedures to guide and augment the recovery efforts. Through discussions with FEMA in the days after the March phone call, it became evident that key factors in this conclusion were miscommunication and overlooked documentation. Given these anomalies, FEMA rescinded its initial final verdict and provided Lee County with the opportunity to submit any new information related to the alleged deficiencies and violations, and to clarify any factual misunderstandings reached by FEMA.

We are confident that the data submitted to FEMA and the detailed discussion of our processes and procedures in this report, provide concrete documentation and evidence that not only is Lee County compliant with the minimum standards of the NFIP, but that our adherence to the higher standards which earned us a CRS Class 5 for the last 17 years continues. As documented in the preceding narrative, the County followed the FEMA-provided processes and procedures for substantial improvement/substantial damage determinations, issued more than 5,800 citations for work without a permit, building maintenance, and stop-work orders, and consulted FEMA guidance during the issuance of over 108,000 building permits since October 2022. We are confident that this data will result in the removal of FEMA's initial determination of noncompliance, and a preservation of the County's CRS Class 5 rating.

When Hurricane Katrina hit the U.S., it proved that the NFIP pricing approach, which had functioned sufficiently since inception, was never designed for such an event, as paying the resulting claims put the NFIP \$16 billion in debt. As events like this continued, FEMA recognized the gaps in existing policies and revamped the entire program, creating a new rating structure. During the last two months of this process, extensive discussion between Lee County, FEMA, and the State has identified gaps in the disaster recovery policies and procedures which were also not designed for an event such as Hurricane Ian. In these discussions, FEMA has acknowledged areas where the communication and framework broke down, and has worked with Lee County to fill these gaps. We as a community look forward to working with FEMA as a vital partner to improve those programs and processes which do not work effectively in a disaster of this magnitude, ensuring that other communities do not face the same challenges Lee County has overcome.