

Date:

<b>Rebuild Florida CDBG - Mitigation</b> <b>Critical Facilities Hardening Program Application</b>
<b>Official Project Title</b>

<b>Applicant Information</b>					
Official Applicant Entity Name:				FEIN #:	
Primary Project Contact Name:				DUNS #:	
Title:			E-mail:		
Mailing Address:				Phone Number:	
City:		State:		Zip Code:	
Please list co-applicant entities if any:		Contact Person:		E-mail Address:	

<b>Project Description</b>	
Write an overview/summary, not to exceed 2,500 words, of the project being proposed. 1) State the project purpose and include a description of the critical facility to be hardened. 2) Specify the risk(s) that will be mitigated by completion of this project. 3) Describe how the work will be completed and the team that will be responsible. 4) Explain the method used to determine project funding requirements. 5) Describe anticipated outcomes. 6) Describe how the facility will be maintained after it is hardened.	
Insert Attachment:	Please title doc: EntityNamePD_CFHP

<b>Community Value</b>	
Describe, in 1,500 words or less, the critical facility's value to the community in normal circumstances and in times of natural disasters. Which of the seven community lifelines will be served by completion of this project? How does this project enhance community resilience? Does the facility have any cultural or historical significance? Attach a maximum of ten photographs that provide both interior and exterior views.	
Insert Attachment:	Please title zip folder: EntityNameCV_CFHP

<b>Capacity Plan</b>	
Provide a strategic plan overview of 1,500 words or less that addresses goals, stakeholders, the work plan, (major tasks and deliverables), resources (staffing and budget) and monitoring/quality controls. Identify the staff members who will be responsible and/or positions that will be filled for CFHP project management and maintenance. Provide a short profile on each person on your current staff who perform project-related tasks and a position description for any new hires who will be assigned to project responsibilities. Have any project contractors been identified? If so, briefly describe your selection process.	
Insert Attachment:	Please title doc: EntityNameCP_CFHP

<b>Implementation Plan</b>	
Prepare a chronological timeline for the entire life of the project that organizes work into logical, manageable tasks and deliverables. The Implementation Plan Template has been provided in Appendix D of the CFHP Guidelines.	
Insert Attachment:	Please rename template: EntityNameIP_CFHP

<b>Budget</b>		
Include your project budget using the Budget Template found in Appendix E in the CFHP Guidelines. Ensure your budget is reasonable, appropriate and accurate. Are the budgeted items consistent with the project description and tasks? Does the amount requested fall within the CFHP applicant's allowable minimum (\$50,000) and maximum (\$15,000,000)? Ensure there is no duplication of benefits.		
Insert Attachment:		Please rename template: EntityNameBudget_CFHP
Is there any duplication of benefits?	Yes:	No:
All funds identified for use on your project must be fully disclosed and detailed to ensure budget accuracy and no duplication of benefits.		
Do you anticipate receiving any funds for this project that will not be supplied by the CDBG-MIT program? If yes, detail the anticipated or committed funds in the Leveraged Dollars section.	Yes:	No:

**Leveraged Dollars**

If your project involves the qualified use of matching or leveraged funds or services in any capacity, (see Part 4.6 in the CFHP Guidelines) then describe the specifics of leveraged fund/service usage. Answer: 1) Are there local or other funds available to address the proposed project in whole or in part? If yes, report all sources of funding and the amount available. 2) Disclose sources and uses of non CDBG-MIT funds. 3) What other federal, state and/ or local entities have you contacted concerning funding for the proposed project and what were the results? Put "N/A" if this section is not applicable to your project.

**County Selection**

Select each county that your project benefits. DEO will use this information to assess MID, social vulnerability, rural and fiscally-constrained areas. Only counties eligible for CDBG-MIT funds are listed below.

Alachua	Flagler	Levy	Polk
Baker	Gilchrist	Manatee	Putnam
Bradford	Glades	Marion	Sarasota
Brevard	Hardee	Martin	Seminole
Broward	Hendry	Miami-Dade	St. Johns
Charlotte	Hernando	Monroe	St. Lucie
Citrus	Highlands	Nassau	Sumter
Clay	Hillsborough	Okeechobee	Suwannee
Collier	Indian River	Orange	Taylor
Columbia	Lafayette	Osceola	Union
DeSoto	Lake	Palm Beach	Volusia
Dixie	Lee	Pasco	Wakulla
Duval	Leon	Pinellas	

<b>Overall LMI Benefit</b>
Identify and list the Census Tract number followed by all LMI Block Groups your project benefits. Example: Tract: 200, Block group: 2, 3; Tract: 2902, Block group: 1, 3, 4, 5, etc.

<b>Special Designations</b>		
Does your project benefit an Area of Critical State Concern according to Florida Statutes 380.05?	Yes:	No:
What is the area of critical state concern?		

<b>Compliance</b>		
According to 84 FR 45838 August 30, 2019 Section V.A.(18), "The State shall make reviews and audits, including on-site reviews of any subrecipients, designated public agencies, and local governments, as may be necessary or appropriate to meet the requirements of section 104(e)(2) of the HCDA, as amended, as modified by this notice. In the case of noncompliance with these requirements, the State shall take such actions as may be appropriate to prevent a continuance of the deficiency, mitigate any adverse effects or consequences, and prevent a recurrence. The State shall establish remedies for noncompliance by any designated subrecipients, public agencies, or local governments."		
Can you certify to comply with state and federal register regulations as outlined in 84 FR 45838?	Yes:	No:

**Maintenance Agreement**

According to 84 FR 45838 August 30, 2019 Section V.A.2.a(10), "Each grantee must plan for the long-term operation and maintenance of infrastructure and public facility projects funded with CDBG-MIT funds. The grantee must describe in its action plan how it will fund long-term operation and maintenance for CDBG-MIT projects. Additionally, the grantee must describe any State or local resources that have been identified for the operation and maintenance costs of projects assisted with CDBG-MIT funds." As such, Federal Register expectations on maintenance for CDBG-MIT projects are expected to be maintained by each entity who proposes a CFHP project.

Can you certify that your entity will comply with state and subrecipient monitoring and maintenance requirements as outlined by 84 FR 45838?

Yes:

No:

**Sign and Date**

As the primary entity contact for this project, I certify that staff, contractors, vendors and community partners of our mitigation initiative:

- A. Will comply with all HUD and Florida requirements in the administration of the proposed CDBG-MIT funded activities;
- B. Will work in a cooperative manner to execute the Subrecipient Agreement that provides the pathway for successful CDBG-MIT program(s) and/or project(s) and;
- C. Certify that all information submitted in this Application is true and accurate

Signature:

Date:

Print button will only print application and not attached documents. Submit button will deliver application to email to the [cdbg-mit@deo.myflorida.com](mailto:cdbg-mit@deo.myflorida.com). Please attach all relevant documents to this email.

**LEE COUNTY WASTE-TO-ENERGY (WTE) PLANT HARDENING PROJECT DESCRIPTION**  
**(LeeCountyPD\_CFHP\_4)**

**1. (A.) PROJECT PURPOSE**

Lee County proposes to harden the Lee County Waste to Energy Facility (WTE), which processes more than 620,000 tons of solid waste per year from both Lee and Hendry counties. The facility generates and provides to the power grid enough renewable energy to power roughly 45,000 residences.

Proposed structural hardening includes the existing roofing systems and securing of the mechanical systems that are mounted to various roof structures. The facility is made up of multiple independent roof structures consisting of traditionally constructed rubber membrane roofing systems. Three of the facility's 10 roof structures were damaged by Hurricane Irma and were replaced with Firestone UltraPly™ TPO Invisiweld™ roofing systems. This roofing system is a Florida-approved product that includes a state-of-the-art bonding and deck securing design that provides increased wind uplift resistance and up to a 20-year warranty. The combined square footage of the three rooftops totaled roughly 38,990 square feet. Costs for these repairs in 2018 were \$418,713.80 or roughly \$10.74 per square foot, installed.

Resources have not yet been found to upgrade the remaining seven rooftops, roughly 79,054 square feet, which should be upgraded to the new roofing systems with the improved bonding and deck securing system and increased wind uplift resistance to help mitigate future losses. In addition, the proposal includes upgraded anchoring of four HVAC systems and 17 exhaust fans mounted on the WTE roof structures and shuttering of glass windows and doors.

Lee County estimates that construction-related costs for this proposal are \$1,226,514. Including a 20% contingency and professional costs, this grant request totals \$2,820,982.50. The contingency reflects difficulty obtaining on-site estimates during the pandemic's suspension of business and social distancing and concerns for inventory shortages and price instability in the near future.

In June 2018, FEMA's Federal Insurance and Mitigation Administration reported that every dollar invested to harden facilities will return \$5 in future cost savings.

**1. (B.) DESCRIPTION OF THE CRITICAL FACILITY**

The facility began operation in 1994 and was expanded in 2007.

All of the household garbage collected in Lee and Hendry counties eventually ends up at the Lee County Resource Recovery Campus. The WTE facility provides the opportunity to recover energy from trash as part of the County's Integrated Solid Waste Management System. More than 800 trucks a day bring garbage to the tipping floor for disposal. Operators use cranes outfitted with grapple claws to lift the garbage from the storage pit and lower it into combustion unit feed hoppers. This process is repeated 24 hours per day, seven days a week. And it's been happening for 25 years.

Utilizing the waste-to-energy process allows Lee County to reduce the volume of waste sent to the landfill by 90 percent. The facility processes 1,836 tons per day of solid waste while generating up

to 60 megawatts of clean, renewable energy with approximately 45 megawatts sold on the open market. The entire Buckingham Campus in east Lee County is powered completely by this electricity and the remaining 85 percent is sold on the open market for the best price available each hour of each day. The electricity generated by burning Lee County waste is enough to continuously power 45,000 homes.

A minimum of 1800 degrees Fahrenheit is used to combust the waste materials leaving an inert ash roughly 10% of its original volume. The facility is equipped with an enhanced metals recovery system designed to remove ferrous and non-ferrous metals from the ash. It is equipped with extensive pollution control systems that were designed to meet more stringent clean air standards than those in place when the facility was constructed. It was the first operational plant in the United States to utilize a permanent active carbon injection system for controlling mercury emissions. .

The WTE plant is located on the Buckingham Campus of Lee County's Solid Waste Department, 10500 Buckingham Road, Fort Myers, 33905, located at 26 37' 55.21"N, 81 45' 37.76W.

## 2. RISK MITIGATION

Loss of the WTE charging floor roof during Hurricane Irma allowed considerable amounts of water to infiltrate the roof. Damage to the electric waste crane systems required the electric drive motors to be replaced before facility operations could resume. Water damage from the loss of one or several of the remaining roofing systems has the potential to be more costly based on their functional areas. Damages to the electrical control systems of this critical facility could shut down operations for months and would require emergency waste diversion to an adjacent community's landfill. The costs for an extended diversion period would be substantial, the cost of which would be an unnecessary burden on the community, particularly in the aftermath of a hurricane or other windstorm when the volume of debris collection spikes.

This proposal includes the upgraded anchoring of four HVAC systems and 17 exhaust fans mounted across the various WTE roof structures. As part of the roofing system hardening project, these mechanical systems would benefit from additional supports and mechanical strapping. Hardening of these structures would help to ensure that damages from dislodged HVAC or exhaust fans did not unduly damage the hardened roofing systems or become projectiles hurled from this facility, which is the equivalent of five stories.

Operation of the WTE facility depends on the ability to receive and process waste, and this process begins at the facility's scale house. This initial point of contact is essential to identifying and directing the proper disposal of the waste materials entering the campus. It is critical that these scale house facilities are protected and are able to return to operation immediately following a hurricane or other disaster event. The current weak point at these facilities are the glass windows and doors. Failure during a storm event would almost certainly render the scale systems inoperable. The installation of impact-resistant shutters at these two critical facilities would help to mitigate the potential loss of use of these facilities by protecting their weakest points.

This proposal also mitigates economic and environmental risk. The WTE is the sole disposal location in Lee County for municipal solid waste. Loss of this critical facility would require that the waste be

trucked out of county to other landfills in Hendry or Charlotte counties – a negative impact on the LMI and rural communities surrounding the landfills. The transfer 624,000 tons of waste to the closest landfill with enough capacity to accept Lee & Hendry County's waste would cost more than \$23.4 million with an additional \$12.4 million in disposal fees. These transfer and disposal costs would be in addition to the minimum operations and maintenance fees, lost revenue from electrical sales, lost revenue from metals recovery, and the facility repair costs at the WTE. These costs would be passed along to the residents and businesses in Lee and Hendry Counties and the partnering municipalities and would ultimately impact 100% of the low- and moderate-income residents in the service areas.

The proposed critical facility hardening projects would greatly reduce the risk of a catastrophic loss of use of this facility. Associated costs have the potential for long- term negative economic impacts on the most vulnerable residents and businesses in the region. An investment in these projects would help to protect the economic stability of the region and to ensure that this renewable resource continues to provide a benefit to the communities it serves.

In Lee County – a HUD-designated MID community – 276,873 people, nearly 42% of the population, qualify for HUD's LMI category. In Hendry County, 45% of the population qualifies as LMI.

### 3. WORK COMPLETION AND MANAGEMENT TEAM

Grant-supported work to complete the hardening will be overseen by the Lee County Department of Solid Waste and Covanta Lee, Inc., the contracted facility operator since its construction in 1994. Lee County Procurement will select a Design Professional and General Contractor through established Lee County Competitive Negotiation protocols and in compliance with all federal guidelines outlined in the Federal Register Notice 84 FR 45838 and Florida DEO requirements.

When final design has been completed, the Design Professional will provide an Opinion of Probable Cost which will be the basis of review for the establishment of the construction bid from the selected General Contractor. The General Contractor is required to secure a minimum of three (3) bids for each component of the project and these bids are shared and reviewed by County Facilities' staff prior to approving the construction bid.

### 4. DETERMINATION OF PROJECT FUNDING REQUIREMENTS

The amount of funds required for this proposal were drawn from the post-Irma hardening of three of the 10 roof structures at the plant. Using the 2018 actual costs and adjusting to account for annual price increases and a small contingency to cover unforeseen repairs, the adjusted cost-per-square-foot is estimated to be roughly \$12.46 or \$985,013 to harden the balance of the roofing systems at the WTE facility.

There are four HVAC systems and seventeen exhaust fans mounted across the various WTE roof structures. As part of the roofing system hardening project, these mechanical systems would benefit from additional supports and mechanical strapping. Hardening of these structures would help to ensure that damages from dislodged HVAC or exhaust fans did not unduly damage the hardened roofing systems or become projectiles hurled from this five story facility. Securing these mechanical systems would be dependent on the type and available anchoring points on the existing units. Where anchoring points are not available, the ability and cost effectiveness to fabricate anchoring points will be compared



to the replacement costs with the most economically sound solution being selected. We estimate that a portion of the 17 exhaust fans would not be capable of being hardened without upgrading the base units. It is expected that all of the HVAC units could be hardened using the existing lift points and strapping. Assuming the use of traditional hardening and anchoring devices and the across-the-board replacement of the fan systems that could not be secured traditionally, we estimate the not-to-exceed costs to be roughly \$90,000.

The WTE facilities maintenance team requested quotes from local vendors to install impact resistance shutters on the scale houses. Estimated costs for this hardening is \$40,000.

Lee County estimates that construction-related costs for this proposal are \$1,226,514. Including a 20% contingency and professional costs, this grant request totals \$2,820,982.50. The contingency reflects difficulty obtaining on-site estimates during the pandemic's suspension of business and social distancing and concerns for inventory shortages and price instability in the near future.

## 5. ANTICIPATED OUTCOMES

This proposal to upgrade the WTE ensures reduces the risk of the catastrophic loss of this critical facility. Its continued operation is vital to healthy and prosperous operation. Specific outcomes include:

- Protect the safe and continuous processing of more than 620,000 tons of solid waste per year from both Lee and Hendry counties, from all municipal residences and business;
- Protect the generation of electrical power that is provided daily to the power grid;
- Prevent the negative environmental impact resulting from increased landfilling that would result if clean-burning incineration and recycling operations were halted by hurricane or other damage;
- Protect low- and moderate-income residents – as well as all rate payers – from the increase in rates that would be necessary to compensate for the expense of repairing the facility and hauling and landfilling all debris.

## 6. MAINTENANCE

Because the Lee County WTE provides a critical, daily service to the Lee and Hendry communities, the County will continue maintaining the improvements as part of their normal facility upgrades and maintenance program. No significant increase in maintenance costs are anticipated. Covanta is responsible, under the terms of its contract, to inspect and perform normal maintenance/repairs to the roof.

**LEE COUNTY WASTE-TO-ENERGY (WTE) PLANT HARDENING COMMUNITY VALUE  
(Lee CountyCV\_CFHP\_2)**

In normal operation, the Lee County Waste to Energy facility (WTE) provides a critical function to the residents and businesses of both Lee and Hendry counties for processing of municipal solid waste. In addition to incinerating waste, each year, the WTE converts roughly 624,000 tons of waste into more than 400,000 megawatts of clean, renewable energy that is distributed to the power grid. In 2019, the facility recovered more than 17,000 tons of ferrous metal and 2,700 tons of non-ferrous precious metals from the waste stream that would have otherwise been landfilled.

The 624,000 tons of garbage converted into energy at the WTE facility, is enough to bury 40 football fields, 10 feet deep, every year. The Lee County WTE facility employs modern-day emissions control systems and helps to off-set the carbon footprint impact of fossil fuel burning energy generators through the sale of renewable green energy credits. The reduction of landfill space and improved air quality are benefits that extend far beyond the immediate communities and future.

During natural disasters and other emergencies, this critical facility gears up to process the spike in debris collection that results from most disasters, particularly hurricanes and floods, both of which Lee County experienced in 2017. A disaster-driven loss of this critical facility would have far-reaching impacts on both the environment and the communities that the WTE serves.

An extended facility outage would require that the waste be trucked out of county to another landfill. The transfer 624,000 tons of waste to the closest landfill with enough capacity to accept Lee and Hendry County's waste would cost more than \$23.4 million with an additional \$12.4 million in disposal fees. These transfer and disposal costs would be in addition to the minimum operations and maintenance fees, lost revenue from electrical sales, lost revenue from metals recovery, and the facility repair costs at the WTE.

Passing these costs along to the residents and businesses in Lee and Hendry counties and the partnering municipalities would ultimately impact 100% of the low- and moderate-income residents in the serviced areas. Lee County is a HUD-determined MID community, with 42% of its population qualified as LMI to HUD standards. Of Lee's 517 Census block groups, 32% are designated LMI. LMI populations are 45% in adjacent Hendry County and 39% in Charlotte County. LMI populations are the least likely to be able to find and afford alternative waste services. The rural and LMI areas of Hendry and Charlotte are the likely alternative locations for landfilling the waste that otherwise would be combusted and converted to energy. Low-income renters and homeowners are more likely to suffer the negative results of increased landfilling in their neighborhoods.

The proposed critical facility hardening projects would greatly reduce the risk of a catastrophic loss of use of this facility. The costs associated with a loss of use of this facility have the potential to have long-term negative economic impacts on the most vulnerable residents and businesses in the region. An investment in this proposal will help protect the economic stability of the region and ensure that this renewable resource continues to provide a benefit to the communities it serves.

Lee County's proposal protects the clean, healthy, and environmentally beneficial operations of the WTE. Much of Lee County's economy is fueled by tourists, visitors and retirees who come here to enjoy the natural beauty of Lee County and the Gulf of Mexico.

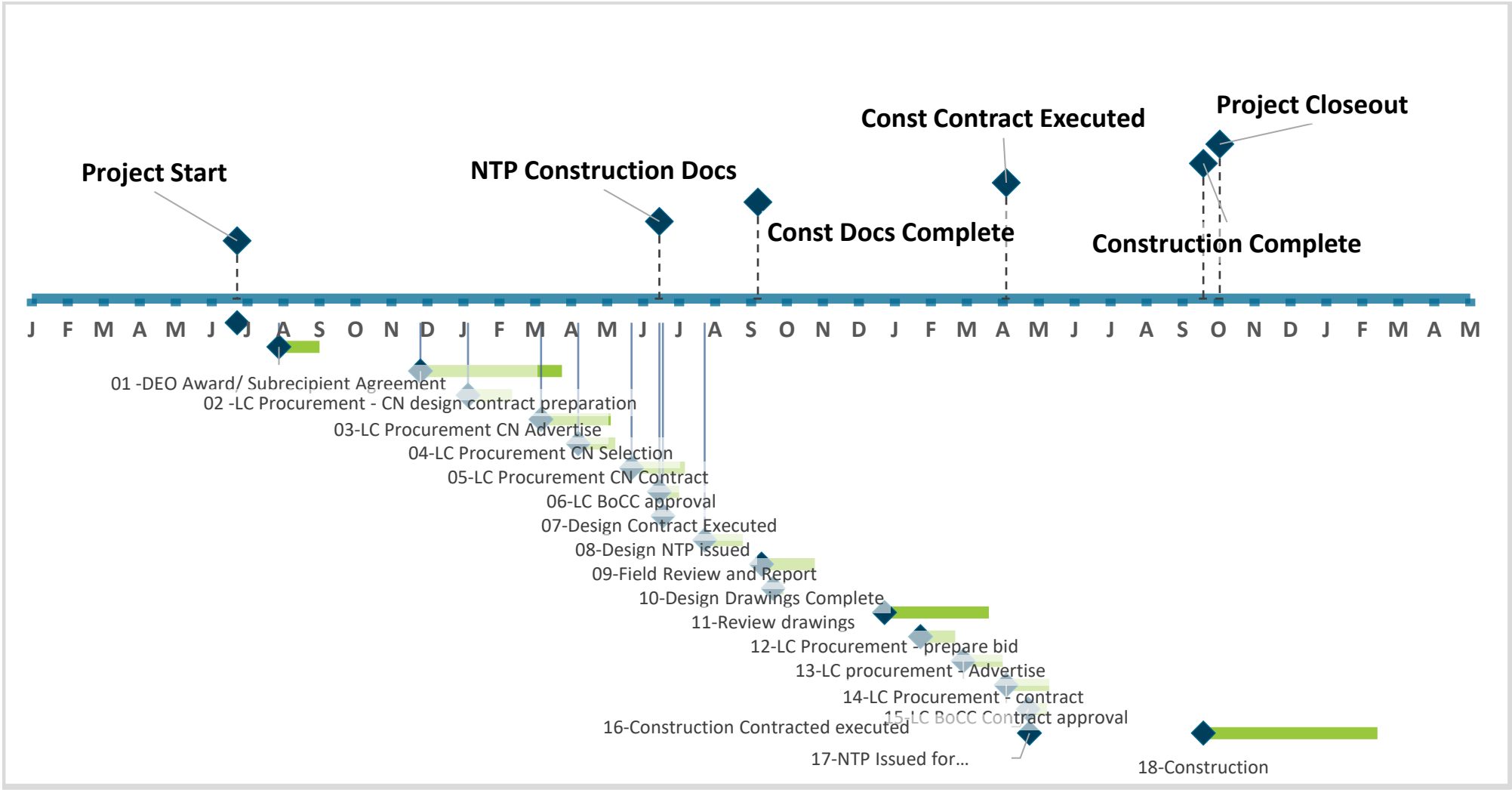
Of FEMA's seven (7) critical community lifelines, the facility affects four:

- **SAFETY and SECURITY:** The efficient and clean disposal of waste, particularly increased amount of debris and vegetation after a storm disaster or flood, allows business to resume and households to return to normal. Interruptions in solid waste processing create health and safety dangers as well as economic interruption. A failed WTE will cause costs of waste processing to increase.
- **HEALTH and MEDICAL:** Although the WTE does not provide a direct medical service, however it does provide a critical service to medical providers. It is important to note that all Lee and Hendry hospitals, clinics, doctor's offices and other medical facilities rely on waste processing, **or all non-regulated** waste materials at the WTE. The ability of local medical providers to do their jobs safely would be compromised if waste processing were also compromised.
- **ENERGY:** The Lee County WTE cleanly generates enough energy to power 45,000 households, a critical resource after a storm.
- **HAZARDOUS MATERIALS:** Lee County is an important part of the process of identifying and removing hazardous wastes from the commercial and residential waste streams. Particularly in an emergency declaration, it is important that there be no additional challenges to the safe practices of identifying, segregating, and coordinating the proper disposal of regulated materials which may be in debris.

This proposal is consistent with Florida's 2018 Enhanced State Hazard Mitigation Plan (ESHMP) goals:

- Goal 1: Implement an effective comprehensive statewide hazard mitigation plan;
- Goal 2: Support local and regional mitigation strategies;
- Goal 3: Increase public and private sector awareness and support for hazard mitigation in Florida; and
- Goal 4: Support mitigation initiatives and policies that protect the state's cultural, economic, and natural resources.

It is consistent with Lee County's Comprehensive Emergency Management Plan and Local Mitigation Strategy, which requires approval of the county's six municipalities. It is important to note that the WTE is located outside the FEMA-designated Special Flood Hazard Area. Please see the attached map to locate the WTE in Lee County, along with other critical facilities which are being proposed for hardening as part of Lee County's regional resiliency plan.



**LEE COUNTY WASTE-TO-ENERGY (WTE) PLANT FIRE SUPPRESSION PROJECT DESCRIPTION  
(LeeCountyPD\_CFHP\_6)**

**1. (A.) PROJECT PURPOSE**

Lee County proposes to harden the fire suppression system of the Lee County Waste to Energy Facility (WTE), which processes more than 620,000 tons of solid waste per year from both Lee and Hendry counties. The facility generates and provides to the power grid enough renewable energy to power roughly 45,000 residences.

The capital investment in the construction of the Lee County WTE was roughly \$300 million.

The proposed fire protection system is essential to protect this critical asset from catastrophic loss from fire. The existing fire protection system consists of manual water cannons located around the WTE charging pit, traditional overhead sprinklers above the tipping floor area, and fire alarms to warn staff and to notify the fire department. These water cannons are designed to be operated by a person standing above a fire along the pit wall. These water cannons are rendered inoperable when the smoke becomes too thick to see or makes operation unsafe to the employee.

The proposed system would include the installation of infrared cameras that would identify hot spots and developing fires before they became uncontrollable. The replacement of the manual water cannons with automated water cannons would be interconnected with these infrared cameras and allow for the cannons to be operated automatically and remotely from the control room or via a Belly-Pack controller that would be operated from outside the facility and/or by the fire department directly. Additionally, this improved system would include the addition of a water wall between the waste storage pit and the tipping floor to help contain a fire to an isolated area where it could be managed without spreading it to other vulnerable areas of the facility.

In the waste industry, it is not uncommon to see small fires resulting from improper disposal of certain items such as fire place ashes or cell phone batteries. The Lee County WTE is no exception, and this facility experiences several small fires per year; all of which have been extinguished within minutes of discovery and in cooperation with the local Tice Fire Department. The existing fire suppression systems are designed to put out small fires and to help control the spread of larger fires until the fire department can arrive to fight the fire. In the event that a fire was to occur during the sheltering phase or following landfall of a hurricane or other disaster event where the fire department was unable to respond to a fire at the WTE facility, the risk of a fire exceeding the capabilities of the existing fire suppression systems is increased exponentially. The proposed system would help to mitigate these risks by providing improved fire suppression capabilities at the facility's most vulnerable points.

The budgetary cost estimates for this project in 2019 were approximately \$1.1 million. In June 2018, FEMA's Federal Insurance and Mitigation Administration reported that every dollar invested to harden facilities will return \$5 in future cost savings. Fires at other WTE plants in the US have caused from \$4 million to more than \$50 million in construction damages, replacement costs, and fees for hauling and landfilling waste.

**1. (B.) DESCRIPTION OF THE CRITICAL FACILITY**

The facility began operation in 1994 and was expanded in 2007.

All of the household garbage collected in Lee and Hendry counties eventually ends up at the Lee County Resource Recovery Campus. The WTE facility provides the opportunity to recover energy from trash in the Integrated System. More than 800 trucks a day bring garbage to the tipping floor for disposal. Operators use cranes outfitted with grapple claws to lift the garbage from the storage pit and lower it into combustion unit feed hoppers. This process is repeated 24 hours per day, seven days a week. And it's been happening for 25 years.

Utilizing the waste-to-energy process allows Lee County to reduce the volume of waste sent to the landfill by 90 percent. The facility processes 1,836 tons per day of solid waste while generating up to 60 megawatts of clean, renewable energy with approximately 45 megawatts sold on the open market. The entire Buckingham Campus in east Lee County is powered completely by this electricity and the remaining 85 percent is sold on the open market for the best price available each hour of each day. The electricity generated by burning Lee County waste is enough to continuously power 45,000 homes.

For the incineration process, a minimum temperature of 1,800 degrees Fahrenheit is used, assuring complete combustion and leaving little chance of releasing unburned pollutants.

The WTE plant is located on the Buckingham Campus of Lee County's Solid Waste Department, 10500 Buckingham Road, Fort Myers, 33905, located at 26 37' 55.21"N, 81 45' 37.76W.

## 2. RISK MITIGATION

Over the past several years, there have been at least two major fires at similar waste to energy facilities in the U.S. These fires caused extensive damages to the facilities and had long-range impacts on waste disposal and service disruptions for the communities they serve for many months.

The Fairfax Virginia facility fire closed the facility for more than 10 months at an estimated cost of more than \$38 million to repair and reopen. Revenue losses to the vendor are estimated to have exceeded \$20 million. The community that this facility served was forced to transfer its waste to an adjacent county's landfill for the 10-month period at significant costs for transfer and disposal.

The Montgomery County Maryland WTE fire took 11 days for the fire department to extinguish. The damages to this facility were far less severe than those suffered in the Fairfax fire. Fortunately, after the fire was finally extinguished, the facility was still able to process the waste it had accumulated in its storage pit and on the floor; unfortunately, they were not allowed to accept any new material and the waste on site had been so saturated with water from fighting the fire that it would not burn and the combustion units required the heavy use of natural gas to maintain a hot enough fire to process the waste. Industry assumptions estimate the costs to repair this facility to be roughly \$4 million, not including revenue losses or the costs for the use of natural gas to operate the facility.

A root-cause analysis performed by HDR Engineering was unable to determine the exact cause of the fire at the Montgomery facility. However, based on their investigation, they identified two contributing factors of increased severity and duration of the fire:

- The inability of the crane cab operator to see and view the tipping floor from his position made it virtually impossible for him to see or even identify that a fire had begun until it had escalated into a major blaze.
  - The Lee WTE proposed infrared camera systems would have quickly identified the heat from the fire, alerted the operator, and begun to extinguish the fire with the automated water cannons.
  - The lack of visibility and safety concerns from the smoke made it virtually impossible for the crane operator to assist with the fight by moving smoldering waste into the combustion units. This parapet mounted crane cab is the same configuration as the Lee facility and a major fire would likely force an early evacuation of this crane cab.
- Poor pit rotation practices and inability to fight the fire remotely.
  - The Lee WTE plant has safe and efficient rotation practices, however, the proposal includes the addition of a water wall to segregate the tipping floor from the waste storage pit. This separation would allow the crane operator to continue to manage waste. In the case of the Montgomery facility, it could have eliminated the ability for the fire to have jumped into the larger waste storage mass.
  - The remote capability to fight the fire would have provided the operator with the ability to move away from the danger and continue to fight the fire from a safe distance.

This proposal also mitigates economic and environmental risk. The WTE is the sole disposal location in Lee County for municipal solid waste. Loss of this critical facility would require that the waste be trucked out of county to other landfills in Hendry or Charlotte counties – a negative impact on the LMI and rural communities surrounding the landfills. The transfer 624,000 tons of waste to the closest landfill with enough capacity to accept Lee & Hendry County's waste would cost more than \$23.4 million with an additional \$12.4 million in disposal fees. These transfer and disposal costs would be in addition to the minimum operations and maintenance fees, lost revenue from electrical sales, lost revenue from metals recovery, and the facility repair costs at the WTE. These costs would be passed along to the residents and businesses in Lee and Hendry Counties and the partnering municipalities and would ultimately impact 100% of the low- and moderate-income residents in the service areas.

The proposed critical facility hardening project would greatly reduce the risk of a catastrophic loss of use of this facility. Associated costs have the potential for long- term negative economic impacts on the most vulnerable residents and businesses in the region. An investment in these projects would help to protect the economic stability of the region and to ensure that this renewable resource continues to provide a benefit to the communities it serves.

In Lee County – a HUD-designated MID community – 276,873 people, nearly 42% of the population, qualify for HUD's LMI category. In Hendry County, 45% of the population qualifies as LMI.

### 3. WORK COMPLETION AND MANAGEMENT TEAM

Grant-supported work to complete the hardening will be overseen by the Lee County Department of Solid Waste and Covanta Lee, Inc., the contracted facility operator since its construction in 1994. Lee County Procurement will select a Design Professional and General Contractor through established Lee County Competitive Negotiation protocols and in compliance with all federal guidelines outlined in the Federal Register Notice 84 FR 45838 and Florida DEO requirements.

When final design has been completed, the Design Professional will provide an Opinion of Probable Cost which will be the basis of review for the establishment of the construction bid from the selected General Contractor. The General Contractor is required to secure a minimum of three (3) bids for each component of the project and these bids are shared and reviewed by County Facilities' staff prior to approving the construction bid.

#### 4. DETERMINATION OF PROJECT FUNDING REQUIREMENTS

Lee County Solid Waste and its engineers have worked closely with the Lee Facility's operator, COVANTA Energy, to design a fire protection system for this facility. The design of the proposed fire protection system was developed in cooperation with several fire system product manufacturers and service providers, and is based on fire protection systems being designed and installed in several Covanta Energy owned and operated facilities.

The budgetary cost estimates for this project in 2019 were approximately \$1.1 million. In June 2018, FEMA's Federal Insurance and Mitigation Administration reported that every dollar invested to harden facilities will return \$5 in future cost savings. Fires at other WTE plants in the US have caused from \$4 million to more than \$50 million in construction damages, replacement costs, and fees for hauling and landfilling waste.

Lee County has figured a 20% contingency for this project because business interruption and social distancing have complicated our ability to get updated quotes in this time frame.

Lee County will draw on its general reserves to provide the required early advance funding for the project. Lee County's reserves are not available to fund this project fully as we continue to recover from Hurricane Irma expenses and we are now in uncertainty over both the 2020 hurricane season and the global pandemic.

#### 5. ANTICIPATED OUTCOMES

This fire suppression proposal to upgrade the WTE reduces the risk of the catastrophic loss of this critical facility. Its continued operation is vital to healthy and prosperous operation. Specific outcomes include:

- Protect the safe and continuous processing of more than 620,000 tons of solid waste per year from both Lee and Hendry counties, from all municipal residences and business;
- Protect the generation of electrical power that is provided daily to the power grid;
- Prevent the negative environmental impact resulting from increased landfilling that would result if clean-burning incineration and recycling operations were halted by hurricane or other damage;
- Protect low- and moderate-income residents – as well as all rate payers – from the increase in rates that would be necessary to compensate for the expense of repairing the facility and hauling and landfilling all debris.

#### 6. MAINTENANCE



Because the Lee County WTE provides a critical, daily service to the Lee and Hendry communities, the County will continue maintaining the improvements as part of their normal facility upgrades and maintenance program. No significant increase in maintenance costs are anticipated.

**LEE COUNTY WASTE-TO-ENERGY (WTE) PLANT HARDENING COMMUNITY VALUE  
(Lee CountyCV\_CFHP\_6)**

In normal operation, the Lee County Waste to Energy facility (WTE) provides a critical function to the residents and businesses of both Lee and Hendry counties for processing of municipal solid waste. In addition to incinerating waste, each year, the WTE converts roughly 624,000 tons of waste into more than 400,000 megawatts of clean, renewable energy that is distributed to the power grid. In 2019, the facility recovered more than 17,000 tons of ferrous metal and 2,700 tons of non-ferrous precious metals from the waste stream that would have otherwise been landfilled.

The 624,000 tons of garbage converted into energy at the WTE facility, is enough to bury 40 football fields, 10 feet deep, every year. The Lee County WTE facility employs modern-day emissions control systems and helps to off-set the carbon footprint impact of fossil fuel burning energy generators through the sale of renewable green energy credits. The reduction of landfill space and improved air quality are benefits that extend far beyond the immediate communities and future.

During natural disasters and other emergencies, this critical facility gears up to process the spike in debris collection that results from most disasters, particularly hurricanes and floods, both of which Lee County experienced in 2017. A loss of this critical facility due to a fire would have far-reaching impacts on both the environment and the communities that the WTE serves.

An extended facility shutdown would require that the waste be trucked out of county to another landfill. The transfer 624,000 tons of waste to the closest landfill with enough capacity to accept Lee and Hendry County's waste would cost more than \$23.4 million with an additional \$12.4 million in disposal fees. These transfer and disposal costs would be in addition to the minimum operations and maintenance fees, lost revenue from electrical sales, lost revenue from metals recovery, and the facility repair costs at the WTE.

Fire damage at similar WTE plants has caused from \$4 to \$25 million to repair or rebuild structures. The capital investment in the construction of the Lee County WTE was roughly \$300 million.

Passing these costs along to the residents and businesses in Lee and Hendry counties and the partnering municipalities would ultimately impact 100% of the low- and moderate-income residents in the serviced areas. Lee County is a HUD-determined MID community, with 42% of its population qualified as LMI to HUD standards. Of Lee's 517 Census block groups, 32% are designated LMI. LMI populations are 45% in adjacent Hendry County and 39% in Charlotte County. LMI populations are the least likely to be able to find and afford alternative waste services. The rural and LMI areas of Hendry and Charlotte are the likely alternative locations for landfilling the waste that otherwise would be combusted and converted to energy. Low-income renters and homeowners are more likely to suffer the negative results of increased landfilling in their neighborhoods.

The proposed critical facility hardening projects would greatly reduce the risk of a catastrophic loss of use of this facility. The costs associated with a loss of use of this facility have the potential to have long-term negative economic impacts on the most vulnerable residents and businesses in the region. An investment in this proposal will help protect the economic stability of the region and ensure that this renewable resource continues to provide a benefit to the communities it serves.

Lee County's proposal protects the clean, healthy, and environmentally beneficial operations of the WTE. Much of Lee County's economy is fueled by tourists, visitors and retirees who come here to enjoy the natural beauty of Lee County and the Gulf of Mexico.

Of FEMA's seven (7) critical community lifelines, the facility affects four:

- **SAFETY and SECURITY:** The efficient and clean disposal of waste, particularly the increased amount of debris and vegetation after a storm disaster or flood, allows business to resume and households to return to normal. Interruptions in solid waste processing create health and safety dangers as well as economic interruption. A failed WTE will cause costs of waste processing to increase.
- **HEALTH and MEDICAL:** Although the WTE does not provide a direct medical service, it does provide a critical service to medical providers. It is important to note that all Lee and Hendry hospitals, clinics, doctor's offices and other medical facilities rely on waste processing for all non-regulated waste materials at the WTE. The ability of local medical providers to do their jobs safely would be compromised if waste processing were also compromised.
- **ENERGY:** The Lee County WTE cleanly generates enough energy to power 45,000 households, a critical resource after a storm.
- **HAZARDOUS MATERIALS:** Lee County is an important part of the process of identifying and removing hazardous wastes from the commercial and residential waste streams. Particularly in an emergency declaration, it is important that there be no additional challenges to the safe practices of identifying, segregating, and coordinating the proper disposal of regulated materials which may be in debris.

This proposal is consistent with Florida's 2018 Enhanced State Hazard Mitigation Plan (ESHMP) goals:

- Goal 1: Implement an effective comprehensive statewide hazard mitigation plan;
- Goal 2: Support local and regional mitigation strategies;
- Goal 3: Increase public and private sector awareness and support for hazard mitigation in Florida; and
- Goal 4: Support mitigation initiatives and policies that protect the state's cultural, economic, and natural resources.

It is consistent with Lee County's Comprehensive Emergency Management Plan and Local Mitigation Strategy, which requires approval of the county's six municipalities. It is important to note that the WTE is located outside the FEMA-designated Special Flood Hazard Area. Please see the attached map to locate the WTE in Lee County, along with other critical facilities which are being proposed for hardening as part of Lee County's regional resiliency plan.

## **LEE COUNTY WASTE-TO-ENERGY PLANT (WTE) FIRE SUPPRESSION CAPACITY PLAN (LeeCountyCP\_3)**

The over-arching goal of the proposal to harden the Waste-to-Energy Plant in Lee County is to protect continuous, critical operations at the plant, which provides services to all households and businesses in Lee and Hendry counties, including medical facilities and all other service providers ensuring FEMA's seven critical lifelines. A related goal is protection of the human and environmental benefits resulting from power generation and reduction in landfilling.

Completion goal for the project itself is two years. Lee County's work plan, included as an attachment to this proposal, helps ensure that Lee County will meet its goal of delivering an efficient and compliant project on time. Lee County has established a Mitigation Grant Working Group, which meets regularly during this application process and will continue to meet until grant closeout. Departments represented on the working group include County Administration, Procurement, County Attorney, and departments of Facilities and Construction Management, Emergency Management and Public Safety, Human and Veteran Services, Solid Waste, Utilities and Transportation.

Stakeholders benefitting from this proposal include all households, businesses and providers of critical lifelines. Particular stakeholders include the LMI populations of Lee and Hendry counties, who would be most impacted by increased rates to offset the spike in costs resulting from repair or replacement of the facility and the estimated \$23.4 million in increased costs of hauling and \$12.4 million in landfilling costs while the WTE is offline.

Stakeholders with responsibility to the work plan primarily are Lee County Administration and the Department of Solid Waste and Covanta Lee, Inc., the County's private partner in operating solid waste services.

The work plan for this project, which is detailed in an attachment, will be coordinated by the Lee County Project Manager, in conjunction with Covanta. Under the compliance direction of Lee County Procurement, they will oversee selection of the General Contractor. The Project Manager with Covanta support will assist in the establishment of the construction bid by reviewing the line item bids and finalizing the final construction bid. All contractors will be hired through a process that meets requirements of Lee County Competitive Negotiation protocols, the Federal Register Notice 84 FR 45838, and Florida DEO requirements.

The hardening team will undertake the following tasks:

1. Execute Grant award (Lee County Board of County Commissioners).
2. Finalize Scope and Advertise for Competitive Bids
3. Solicit/Select General Contractor (Lee County Procurement with Competitive Negotiation Selection Committee made up of Lee County and Covanta staff).
4. Review all construction documents and bidding procedures and results.
5. Establish construction bid price (Lee County Project Manager and Covanta staff with General Contractor).
6. Award contract for construction (Lee County BoCC).
7. Monitor construction (Lee County Facilities Construction and Maintenance and Covanta staff).

Lee County's Administration, Procurement, Construction and Facilities Management and Solid Waste staff have the adequate expertise, staffing and financial capacity for this project. Covanta, our contact partner, is expected to assist with project management.

Lee County's construction project manager is Scott Musheff, Architect and Senior Project Engineer for Lee County Department of Construction and Facilities Management. He has 30 years of experience managing local government projects, including administration of CDBG and FEMA HMGP grants.

Lee County's Solid Waste project manager is Jason Fournier, Manager of Lee County Solid Waste Operations.

Covanta's project coordinator is Mike Duff.

## **Rebuild Florida Critical Facility Hardening Program Project Budget Template Instructions**

This template is customizable to fit the budget proposal for your project. Feel free to edit left-hand segments and add notes when needed.

If a section does not have enough cells for the category that you are working on, you can add cells by highlighting a complete row and right-clicking. A dialogue box will appear that permits you to add a row of cells. Click “Insert” and then select either “Insert Above” or “Insert Below”, depending on where you would like the new row to be placed. The new row will appear above or below the row you highlighted.

Enter project name, primary contact name and phone number and the official applicant entity name.

1. On the left-hand side of the template there is a list of major project items numbered 1 to 3. Beneath each major project are related sub-groups. You may edit each of these areas to fit your proposed budget plan. For example, if you do not have Mechanical Hardening, you may delete that numbered row and the related subgroups.
2. List anticipated and committed sources of other project funding sources in the “Sources of Other Funds” category. These funds are non-CDBG-MIT funds. Include entities you have contacted, even if a funding commitment has not yet been made. Disclose the amount you requested or expect to receive. If you need to add rows in this section, follow the directions for adding rows outlined above.
3. You can use the right-side Notes column to elaborate on budgeted items as needed.

## FL CDBG Mitigation

### Rebuild Florida Critical Facilities Hardening Program Project Budget (Template)

Project Name:	Lee County Waste-to-Energy (WTE) Fire Suppression System (LeeCounty_CFHP_6)	Primary Contact Name and Phone Number:	Joan D. LaGuardia (239) 839-6038	Official Applicant Entity Name:	Lee County Board of County Commissioners
<b>Project</b>		<b>Budget</b>			<b>Notes</b>
Description	CDBG-MIT Amount	Other non CDBG-MIT Funds	Source of Funds*	Total Funds (CDBG-MIT and Other)	
<b>1. Critical Facilities Hardening</b>					
Wet Proofing					
Dry Proofing					
Roof Hardening					
Anchoring Roof Mounted Heating					
Retrofitting Building Exteriors					
Storm Proofing Windows					
Removal and Repair Obstructions					

<b>2. Mechanical Hardening</b>					
Ventilation/Air Conditioning Units					
Generator Unit Installation/Repair					
Water Pump Installation/Repair					
Fire Suppression System Upgrades	\$1,100,000.00			\$1,100,000.00	Replace manual water cannons with automated water cannons linked to infrared cameras
<b>3. Other</b>					
Shelters					
<b>Contingency</b>	\$220,000.00			\$220,000.00	20% of total acquisition and installation costs
<b>Administration</b>	\$55,000.00			\$55,000.00	Lee County construction and grant administration costs
	\$66,000.00			\$66,000.00	Engineering design and construction administration fees
<b>Planning</b>	\$1,441,000.00			\$1,441,000.00	
<b>Totals:</b>	\$2,820,982.50			\$2,820,982.50	



**\* All funds identified for use on your project must be fully disclosed and detailed to ensure budget accuracy and no duplication of benefits. Show the sources and amounts of other funds needed to complete the project below, including local funds and grants from other agencies. Any anticipated or committed funds must also be included.**

<b>Source of Other Funds</b>	<b>Amount</b>
1. N/A	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	

