



David Briley, Mayor

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Metropolitan Nashville and Davidson County Multi-Hazard Mitigation Plan Annual Progress Report October 2018

The purpose of this document is to provide an annual progress report of activities associated with the Multi-Hazard Mitigation Plan of Metropolitan Nashville and Davidson County, and its satellite cities. However, since this is the first annual progress report (moving away from only minutes), we will also cover the background information of the hazard mitigation plan and the planning process.

Annual Progress Report

Every year, the Nashville Office of Emergency Management (OEM) will create and submit an annual report, in coordination with the Community Planning Team, for progress of the Multi-Hazard Mitigation Plan review and revisions.

This report is for informational purposes only and does not require action by the Metropolitan Nashville City Council or Mayor. Therefore, this report will be sent electronically to the Metropolitan Mayor, City Council and State NFIP Coordinator, and will be available to the public on the OEM website (www.oem.nashville.gov), and released to the media via a media release by the OEM Public Information Officer.

Background

As part of the overall community planning effort for hazard mitigation, the Metropolitan Government of Nashville and Davidson County, Tennessee, (Metro) has prepared a Multi-Hazard Mitigation Plan pursuant to the requirements of the Disaster Mitigation Act of 2000 (DMA) (Public Law 106-390).

Hazard Mitigation is defined as any sustained action taken to reduce or eliminate long-term risk to human life and property from hazards. Hazard Mitigation Planning is the process through which the hazards that threaten communities are identified, the likely impacts of those hazards are determined, mitigation goals are set, and appropriate strategies that would lessen the impacts are identified, prioritized, and implemented.

Hazard Mitigation Planning is a requirement for state and local governments in order to maintain eligibility for certain federal disaster assistance and hazard mitigation funding programs, such as FEMA's Community Rating System (CRS) and Flood Mitigation Assistance (FMA) programs. The Nashville Office of Emergency Management has formulated a single planning process that melds these two sets of planning requirements together and meets the requirements of a total of six major programs: CRS, FMA, DMA, Hazard Mitigation Grant Program (HMGP), FEMA's Pre-Disaster Mitigation Program (PDM), and flood control projects authorized by the U.S. Army Corps of Engineers (USACE). Metro is both a community at risk and a community that has benefited from federal mitigation funding programs.

FEMA planning regulations and guidance stress that each local government seeking FEMA approval of their mitigation plan must participate in the planning process. This means that all satellite cities within Davidson County that want to take advantage of these programs must either participate with Metro in this plan, or create their own stand-alone mitigation plan and submit it to FEMA.

The current Multi-Hazard Mitigation Plan was last fully revised and adopted by the Metro Nashville and Davidson County Mayor on April 30th 2015, and subsequently by all five satellite cities of Belle Meade, Berry Hill, Forest Hills, Goodlettsville and Oak Hill. The current plan has had annual review meetings ever since, and those minutes are available on the OEM website. The next full revision will be due in 2020, and the Multi-Hazard Mitigation Community Planning Team will meet in early-2019 to begin the review and revision process. Once the next full revision is completed, the plan must be approved at the state and federal level, and then adopted at each respective local level.

Planning Steps

The Hazard Mitigation Plan planning process involves ten main steps:

1. **Organize.** *The lead agency is the Nashville OEM and the Community Planning Team (CPT).*
2. **Involve the Public.** *The public is afforded the opportunity to provide input and comment throughout the planning process.*
3. **Coordinate with other Departments/Agencies.** *Coordination with other community planning efforts is paramount to the success of the plan. This plan and the process integrates many other plans, studies, reports etc., along with the CPT reaching out to other key agencies such as the U.S. Army Corp. of Engineers, U.S. Geological Survey and State of TN agencies to name a few.*
4. **Assess the Hazard.** *The Nashville CPT conducts Hazard Identification Risk Assessments (HIRA) which identifies hazards for the planning area. This process also researches previous occurrences, those that might occur in the future, and the likelihood of their occurrence or reoccurrence.*
5. **Assess the Problem.** *This is where the team conducts vulnerability and capability assessments to understand the impact that each hazard would have and to determine the current ability of the planning area to mitigate the hazards through existing policies, regulations, programs and procedures.*
6. **Set Planning Goals.** *Planning goals are established to incorporate improvement areas identified in Step 5 into the mitigation plan. The current goals and objectives set by the CPT are:*
 - *Goal 1: Reduce exposure to hazard related losses for existing and future development.*
 - *Objective 1.1: Strengthen the existing flood hazard mitigation program.*
 - *Objective 1.2: Protect critical facilities, utilities, and infrastructure.*
 - *Objective 1.3: Improve the coordination of severe weather mitigation actions.*
 - *Objective 1.4: Develop a coordinated set of mitigation actions that address geological hazards (earthquakes, sinkholes, and landslides).*
 - *Goal 2: Promote awareness of hazards and vulnerability among citizens, business, industry, and government.*
 - *Objective 2.1: Develop a seasonal multi-hazard public education campaign to be implemented annually.*
 - *Goal 3: Maximize use of available funding.*
 - *Objective 3.1: Identify multiple objective opportunities that can be used to support mitigation activities.*
 - *Objective 3.2: Identify and analyze project cost share options.*
 - *Objective 3.3: Submit mitigation project applications annually at a minimum.*

7. Review Possible Mitigation Activities. *The CPT reviews previous activities and goals along with any new activities and/or goals presented to the team. The team continues to focus on the following categories of mitigation measures:*
 - *Prevention;*
 - *Property Protection;*
 - *Structural Projects;*
 - *Natural Resource Protection;*
 - *Emergency Services; and*
 - *Public Information*
8. Action Plan. *The action plan presents the prioritized recommendations for Metro to pursue in order to lessen the vulnerability of people, property, infrastructure, and natural and cultural resources to future disaster losses. This also includes a cost estimate, community benefit and any potential funding sources.*
9. Adopt the Plan. *Upon completion, the Metropolitan Mayor adopts the plan by letter of promulgation and the satellite cities are given the opportunity to adopt this plan as their city plan through letters of resolution at their respective public meetings.*
10. Implement the Plan, Evaluate its Worth, Revise as needed. *Upon adoption, the mitigation plan faces the truest test of its worth, implementation. Many worthwhile and high priority mitigation actions have been recommended and the CPT must decide which action to undertake based upon priority and available funding. In addition, the plan requires regular maintenance. Annual reviews and updates must be completed and will help in evaluating the implementation of the plan.*

Community Planning Team (CPT)

The DMA planning regulations and guidance stress that each local government seeking the required FEMA approval of its mitigation plan, must participate in the planning process. The Community Planning Team (CPT) is led by the Nashville Office of Emergency Management and composed of Metro employees from various departments, satellite city representatives, public utility agencies and State and Federal agencies. The CPT is responsible for the annual reviews and any revisions and updates to the plan, along with taking the lead with action items and following up as appropriate.

Additional agencies and stakeholders have been and will continue to be contacted to serve as subject matter experts, to coordinate programs and to help support the community's efforts. These agencies have previously included the U.S. Army Corps of Engineers and the National Flood Insurance Program (NFIP) State Coordinator.

The following table lists members who participate on the Community Planning Team:

CPT Member	Agency / Title	Phone	E-mail
Heidi Mariscal (Lead)	OEM/ Planning, Training, Exercise Coordinator	615-862-8530	Heidi.Mariscal@nashville.gov
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Nashville Office of Emergency Management

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Brad Heilwagen	Wood-MWS/ Water Engineering Branch Manager	615-862-4505	brad.heilwagen@amec.com
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Tim Young	Metro Public Works/ Technical Specialist I	615-862-8750	Tim.young@nashville.gov
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Gary Goodwin	Goodlettsville/ Police Chief	615-851-2220	ggoodwin@cityofgoodlettsville.gov
James Hunt Sr	Belle Meade/ Mayor	615-297-6041	jhunt@citybellemeade.org
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Tim Ellis	Goodlettsville/ City Mgr	615-851-2200	tellis@cityofgoodlettsville.org
Tommy Campsey	Oak Hill/ Safety Coord.	615-371-8291	safetycoordinator@oakhilltn.us

Mitigation Action Plan

The Community Planning Team has established an Action Plan that lists mitigation initiatives called action items. The Action Plan presents the prioritized recommendations for Metro to pursue in order to lessen the vulnerability of people, property, infrastructure, and natural and cultural resources to future disaster losses. The recommendations are listed under their corresponding goal and each item includes a cost estimate and community benefit.

New projects/action items are recommended by CPT members at the annual review meetings. If the CPT agrees to the action item, it is added to the list. Unfortunately some project deadlines are not met due to lack of funding, staff available or similar. The CPT will continue to keep these items in the Action Plan until it is either complete or the CPT determines it is no longer feasible.

Attached is a *summarized* list of the recommended actions and their most recent updates for this 2018 Annual Report. The full Multi-Hazard Mitigation Plan includes all detailed information for each action item (and associated goals/objectives) and updates since the creation of the action item and can be found on Nashville OEMs website www.oem.nashville.gov.

Summary

Metropolitan Nashville and Davidson County, through the CPT, is committed to continuing to enhance mitigation efforts as much as possible to reduce or eliminate risk to human life and property from hazards in our community. We are proud to have achieved a Class 8 certification with the Community Rating System, and to bring the extra discount to our community. In addition to the community discount, this plan and associated actions will allow us to continue to take advantage of future funding available for hazard mitigation activities. The continued collaboration, coordination and support from partners inside and outside of Metro Nashville government, including our satellite cities and community at large, plays a critical part in the success of hazard mitigation all around.

Heidi J. Mariscal
Nashville Office of Emergency Management
Planning, Training, Exercise Coordinator

Action #	<p align="center">NASHVILLE/DAVIDSON COUNTY HAZARD MITIGATION ACTION PLANS SUMMARY & 2018 UPDATES</p>	Lead Responsible Agency
1-1	Based upon the priority list, the action plan recommends that Metro initiate design and construction of high priority capital improvement projects.	MWS
2018 update	<p><i>For FY18: Total Capital Projects: \$10,873,172.51; Class "C" Projects: \$3,077,104.84; Metro Water Grate Replacement: \$350,000; Tree Surround Grate Replacement: \$6,000; USIC Locating Services: \$156,360; Metro Center Levee Grass Maintenance: \$96,306.88; Total Street Sweeping: \$955,460; Grand Total of all Stormwater Projects FY18: 15,514,404.23</i></p> <p><i>For FY17: Total Capital Projects: \$1,295,470.55; Class "C" Projects: \$1,113,779.54; Metro Water Grate Replacement: \$450,000; Metro Center Levee Grass Maintenance: \$45,945.50; Total Street Sweeping: \$929,762.52; Grand Total of all Stormwater Projects: \$3,834,958.11</i></p> <p><i>For FY16: Total Capital Projects: \$10,903,784.59; Class "C" Projects: \$710,881.16; Metro Water Grate Replacement: \$477,260.40; Total Street Sweeping: \$707,749.97; Grand Total of all Stormwater Projects: \$12,799,676.12</i></p> <p><i>For FY15: Total Capital Projects: 16,560,022.55 + Murfreesboro Pike Stormwater Improvement: \$1,000,000; Class "C" Projects: \$741,774; Metro Water Grate Replacement: \$300,000; Emergency Pipe Cleaning: \$29,800; Total Street Sweeping: \$786,254.47; Grand Total of all Stormwater Projects: \$19,417,851.02</i></p> <p><i>For FY14: Total Capital Projects: \$3,857,349.68; Class "C" Projects: \$837,869.23; Total Street Sweeping: \$818,638.08; Grand Total of all Stormwater Projects: \$5,513,856.99</i></p>	
1-2	The CPT recommends that ordinance language to provide added protection for critical facilities and prohibit hazardous materials and public health hazards from the floodplain is drafted, circulated for review and adopted.	MWS, Planning, Codes
2018 update	<i>Metro Water has begun the process to revise and update the current Stormwater Management Manuals Volume 1 (Regulations) and Volume 5 (LID Manual). Volume 1, Chapter 5 - Floodplain Requirements will be included in this update process and address critical facilities. (MWS) It was also noted that this needs to be more coordinated with Codes.</i>	
1-3	The Nashville Office of Emergency Management (OEM) should review the costs and benefits of preparing a detailed flood response plan that identifies specific actions to take at different flood level predictions.	OEM
2018 update	<i>With the ongoing development and implementation of Nashville's Situational Awareness of Flood Events (SAFE) and Nashville Emergency Response Viewing Engine (NERVE) programs, the CPT is in the process of reviewing an individual plan including these programs. Once the individual plan is created, the CPT will pursue formal community adoption by Metro Council. (OEM/MWS)</i>	

1-4	The studies underway in the approximate A Zones should be completed and adopted into Metro's floodplain regulations. The studies should then be submitted to FEMA with a request to revise the FIRM.	MWS
<i>2018 update</i>	<i>Working to complete the last few stream studies to eliminate the remaining un-numbered "A" zones in Davidson County. (MWS)</i>	
1-5	Develop a property acquisition plan and associated policies to acquire properties in the repetitive loss areas.	MWS
<i>2018 update</i>	<i>On-going. Metro Water Services recently submitted applications to FEMA for home buyout projects through the federal grant programs. These projects focus on repetitive loss properties as identified by FEMA. MWS has also partnered with the US Army Corps of Engineers (USACE) on a home buyout project in Mill Creek. Offers will be made to the first homeowners in this project by the end of this calendar year. Other projects have been identified by the COE in Sevenmile Creek, Richland Creek, Whites Creek, and Browns Creek. MWS is working to complete a \$5M home buyout project funded 100% by MWS funds. (MWS)</i>	
1-6	Fund, acquire, and install appropriate hardware and software.	OEM
<i>2018 update</i>	<i>OEM and all assigned Emergency Service Coordinators are still utilizing the free program LEEP within the FBI. Metro Water recently paid for the river cameras to have night vision added for nighttime usage. OEM will investigate the current river cameras remaining life span and potentially investigate the need to replace. OEM suggests revisiting this action to either close due to the current systems in place, and/or revise/add a new action item for more general hardware and software purchases for improving/maintaining situational awareness. (OEM)</i>	
1-7	The MWS Stormwater Division should review the costs and benefits of formalizing Metro's inspection and maintenance program to include detention facilities as well as streams and ditches.	MWS
<i>2018 update</i>	<i>This has moved into the implementation phase. For FY17, estimated 204 detention pond inspections and in FY18 estimated 841. (It is estimated that 70% of Stormwater Control Measures/SCM inspections were detention ponds) (MWS)</i>	
1-8	It is recommended that the definition of a critical lot be expanded to include specific geological details and defined subjectively during plat review and that the critical lot concept be used in review of other developments.	MWS, Planning, Codes
<i>2018 update</i>	<i>No change. (Planning)</i>	
1-9	MWS Drainage Maintenance staff should make site visits in response to complaints or inquiries from property owners. Staff should be trained in retrofitting techniques and be comfortable providing retrofitting guidance during site visits.	MWS

2018 update	<i>MWS is investigating more formalized training. (MWS)</i>	
1-10	The severe weather hazards of drought and wildfire, extreme temperatures, thunderstorms and high winds, tornadoes; and winter storms are recommended to be included in a multi-hazard, seasonal Public Awareness Program. (see Goal #2)	
2018 update	<i>(See 2-1)</i>	
1-11	It is recommended that Metro personnel participate in training in the use of the RSDE program.	MWS
2018 update	<i>On-going. Due to personnel turnover, MWS is training new personnel. This training will be addressed at an annual conference in 2019. (MWS)</i>	
1-12	The CPT recommends assisting the City of Goodlettsville with the FEMA repetitive loss buyout program and associated flood mitigation initiatives.	MWS, OEM
2018 update	<i>MWS does not currently have the study from the COE on Dry Creek, but will obtain one and review and advise. (MWS)</i>	
1-13	The CPT recommends assisting local colleges and universities in obtaining outdoor early warning sirens through grant funding and connecting them to the city's existing early warning siren systems.	OEM
2018 update	<i>On-going. Belmont was looking at possibly putting in outdoor early warning sirens, no update on that discussion. Planning did a study on possible siren locations and they could possibly include some higher education locations. OEM to monitor. (OEM)</i>	
1-14	The satellite city of Oak Hill (located within Davidson County, TN) is aware of certain areas in their jurisdiction that have historically experienced flooding during significant rain events. In an effort to address these and any other such issues that may exist, Oak Hill has initiated a 3 Phase Drainage Study/Correction Plan (see below). It is recommended to include this project from The City of Oak Hill in this Multi-Hazard Mitigation Plan as it mirrors actions with Metro Water Services, and applies to the over goal.	City of Oak Hill
2018 update	<i>The potential COE project for Browns Creek has identified 6 homes within the city limits of Oak Hill. The funding for this project once approved will be 65% COE and 35% Local. MWS will coordinate with the City of Oak Hill to discuss this potential project. No homes have been identified in either Berry Hill or Forest Hills. (MWS)</i>	
1-15	Based upon the priority list, the action plan recommends that Metro initiate design and construction of high priority capital improvement projects	MWS
2018 update	<i>Leak protection program has been increased. MWS has a multi-year contract in place for water distribution leak detection (WSO) that runs through March 2020. The contractor evaluates all of MWS' water distribution system each year via pipeline "listening technology" to identify subsurface system leaks. (MWS)</i>	

1-16	The Clean Water Nashville Overflow Abatement Program (CWNOAP) Design Management Manual (Section 2.6.1) stipulates that all plan projects abide by the following flood elevation considerations.	MWS
<i>2018 update</i>	<i>On-going. There are already specifications on elevating to flood specs. (MWS)</i>	
1-17	NES has planned the construction of a joint Training and Operation Center in the northern part of the service territory to be located on Myatt Drive.	NES
<i>2018 update</i>	<i>Completed – close out at next revision.</i>	
1-18	In restoring MWS’ water and sewer facilities from 2010 Flood impacts, site-specific flood risk mitigation was employed as possible/feasible in bringing facilities back on line. Further, it has been MWS’s practice since the May 2010 flood to incorporate flood mitigation into capital projects planned for the facilities that were impacted by the flood. Since the flood, the designs were modified to elevate the facilities above the flood of record to minimize the potential impacts of future floods.	MWS
<i>2018 update</i>	<i>The projects on 8 buildings are almost entirely complete, and should be entirely done by the middle of 2019. (MWS)</i>	
2-1	Develop and conduct a multi-hazard, seasonal Public Awareness Program that provides citizens and businesses with accurate information describing the risk and vulnerability to natural hazards, and is implemented on an annual basis.	OEM, MWS
<i>2018 update</i>	<i>Team agrees to wait for full revision to evaluate the HIRA. It was discussed to get the PIO’s together from certain departments to agree on quarterly public outreach to do together. Cindy P. will work with us on making sure the CRS requirements are included in this discussion and ultimately in the public outreach plan. Will make sure that this plan includes the satellite cities with templates and a plan on when to discuss what for their newsletters etc. (OEM/MWS)</i>	
2-2	Metro Water Services should request the state NFIP Coordinator to conduct Agent and Lender Workshops in support of the community’s overall NFIP program efforts.	MWS
<i>2018 update</i>	<i>On-going. Silver Jackets group developed this training and now it just needs to be implemented by the State NFIP Coordinator. (MWS)</i>	
2-3	MWS currently sends an annual mailing to the approximate 10,000 properties located within the 100-year floodplain. It is recommended that MWS Stormwater Division continue the mailing and that the mailing be modified to include other natural hazards of concern that have been identified through the hazard mitigation planning process.	MWS

2018 update	<i>On-going. The annual mailing to the homes in the floodplain was sent to over 12,000 property owners last year. That mailing did not include properties in the satellite cities. MWS will work with the satellite cities with the intent to include their residents in the next mailing. (MWS)</i>	
2-4	Discussions should be held with Metro website staff on the best way to post Elevation Certificate data on the website and procedures to maintain the data.	MWS
2018 update	<i>Completed – close out at next revision.</i>	
3-1	The Nashville Office of Emergency Management (OEM), with help from the MWS Stormwater Division’s engineers, should review the costs and benefits of developing flood crest prediction programs for other streams with reporting gauges.	MWS, OEM
2018 update	<i>No changes at this time.</i>	
3-2	Metro officials should talk to their state legislators and Tennessee Department of Environment and Conservation staff about the feasibility of amending the State’s dam safety laws.	MWS, OEM
2018 update	<i>No changes; Review feasibility at next revision.</i>	
3-3	Metro’s Stormwater Division should pursue a Cooperating Technical Partner agreement with FEMA in order to get its mapping standards to better fit local conditions or make the community a higher priority for mapping support.	MWS
2018 update	<i>No changes; Review feasibility at next revision.</i>	
3-4	Develop a financial strategy to design and construct large capital improvement projects. The strategy shall incorporate a cost-sharing plan to leverage local, state, and federal funding for stormwater management activities and projects.	MWS
2018 update	<i>No changes; Murfreesboro Rd/Vultee project is about 75% complete. (MWS)</i>	
3-5	The CPT recommends applying annually for potentially available HMGP and FMA grants.	MWS, OEM
2018 update	<i>Submitting applications by the end of this month for other projects (MWS)</i>	