

G. Review of 2017 Mitigation Strategy

The 2017 mitigation strategy included 324 actions and an additional 7 amendments were added to the plan totaling 331 existing actions. The review of actions is described in Section 6.1. Due to the volume of actions the review of each is provided in this appendix. Red cells show the actions was removed, a duplicate, or revised into an improved 2022 action and Green designates it is continued or ongoing.

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Pre-identify emergency sheltering locations for different types of disaster.	OEM	Existing	Yes	Yes	OEM conducts training and exercises on an ongoing basis	Ongoing. Shelter locations are updated on an as need basis. The last assessment and update of top tier shelters was completed in 2019.	Removed - response focused
Optimize use of HAZUS-MH software for Philadelphia's unique urban environment. The software update will allow Philadelphia to generate more accurate loss estimates for various hazards.	OEM	Potential	No	Yes	Due to lack of funding, data, and expertise, the action was delayed since its inclusion in the 2012 HMP.	Not complete due to lack of funding and expertise. Submitted PDM grant for 2022 HMP update and Hazus analysis.	Removed/revised - combined into a new 2022 Hazus action
Develop a list prioritizing City buildings that require redundant power sources.	OEM	Existing	Yes	Yes	OEM is assessing City facility power needs through June 2016.	Completed assessment in 2016. OEM will maintain and update current list of city facilities backup power on a frequent basis. OEM maintains GIS layer of facilities requiring redundant power.	Completed - see 2020 Review
Revise city-wide evacuation planning	OEM	Potential	No	Yes		Update unavailable	Removed - response focused
Continue EOC training and exercises.	OEM	Existing	Yes	Yes	OEM continues to conduct trainings on an ongoing basis for staff and stakeholders.	Training is conducted whenever new partner agencies or liaisons are identified. Just in time EOC	Removed - response focused and existing capability

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						training is conducted when the EOC activates. OEM staff participate in internal exercises at least once a year.	
Conduct logistics center planning	OEM	Potential	No	Yes		Still a priority, but not started due to lack of staff time available.	Removed - response focused
Conduct outreach and coordinate personnel to keep the Philadelphia homeless population safe during extreme cold and extreme heat events.	OSH	Existing	Yes	Yes	Ongoing, now conducted under DBH and Project Home	Ongoing.	Ongoing
Maintain enrollment in NFIP by implementing floodplain management initiatives, reducing the City's flood risk, and allowing residents to receive discounted flood insurance	L&I	Existing	Yes	Yes	Currently going through the Community Rating System that will possibly increase the discount of Flooding insurance. Working with FEMA to provide training for inspectors and City Staff	Philadelphia continues to stay in compliance with NFIP standards. This should stay as a priority.	Ongoing
Develop surge staffing for expanded shelters	OEM	Potential	No	Yes		No updates to report. OEM relies on partner agencies for surge staffing.	Removed - response focused
Revise current floodplain ordinances to comply with the latest national standards	L&I	Existing	Yes	Yes	Updated in 2012 and then reviewed by FEMA in 2015 to be found in compliance.	Ongoing	Removed/revised - similar actions combined
Identify logistics staging sites	OEM	Potential	No	Yes		Still a priority, but not started due to lack of staff time available.	Removed - response focused
Develop and distribute fliers for mold abatement.	PDPH	Complete	Yes	Yes	Completed.	N/A	Completed per earlier review

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Upgrade equipment and resources necessary to respond to flooding, winterstorms, and developing or unforeseen hazards.	STREETS	Existing	Yes	Yes	Ongoing	Ongoing	Ongoing
Expand SPOT training for all PPD personnel	PPD	Potential	No	Yes		PPD and OEM participate in trainings relating to identifying suspicious activity. Review with OEM staff members prior to special events, however, no formal training has been conducted.	Ongoing
Increase training of staff involved in Winter Operations.	STREETS	Existing	Yes	Yes	Ongoing	Ongoing	Removed - response focused
Maintain mutual aid agreements with New Jersey Emergency Management Agency and the Southeastern Pennsylvania Regional Task Force	OEM	Complete	Yes	Yes	Completed	N/A	Completed per earlier review
Maintain and update Mass Fatality Plan	OEM	Complete	Yes	Yes	Completed	N/A	Completed per earlier review
Conduct outreach with CIKR assets to assess blast resistance and HVAC shutdown procedures	PPD, OEM	Potential	No	Yes		Update unavailable	Removed - response focused
Maintain and update Mass Casualty Plan	OEM	Complete	Yes	Yes	Completed	N/A	Completed per earlier review

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Maintain roam secure alert network as a government notification system	OEM	Complete	Yes	Yes	Completed	N/A	Completed per earlier review
Evaluate various seismic building design enhancements using HAZUS-MH to identify enhancements that reduce losses generated by earthquakes.	OEM	Potential	Yes	Yes	2012 HMP stated the timeframe as 2 years. Due to lack of funding and expertise, the assessment was delayed.	Not complete due to lack of funding and expertise. Submitted PDM grant for 2022 HMP update and Hazus analysis.	Removed/revised - combined into a new 2022 Hazus action
Maintain and update the Hazardous Materials Response Plan.	OEM, PFD	Complete	Yes	Yes	Completed	N/A	Completed per earlier review
Evaluate various building enhancements using HAZUS-MH to identify opportunities to reduce flooding.	OEM	Potential	Yes	Yes	2012 HMP stated the timeframe as 2 years. Due to lack of funding and expertise, the assessment was delayed.	Not complete due to lack of funding and expertise. Submitted PDM grant for 2022 HMP update and Hazus analysis.	Removed/revised - combined into a new 2022 Hazus action
Maintain Hazmat Rail Annex	OEM, PFD	Complete	Yes	Yes	Completed	N/A	Completed per earlier review
Maintain suspicious activity reporting protocol	DVIC, PPD	Complete	Yes	Yes	Completed	N/A	Completed per earlier review
Hazards U.S. Multi-Hazard (HAZUS-MH) Modeling: Determine losses generated by tropical cyclones and engineering effectiveness and cost-benefit of various mitigation actions.	OEM	Potential	Yes	Yes	2012 HMP stated the timeframe as 2 years. Due to lack of funding and expertise, the assessment was delayed.	Not complete due to lack of funding and expertise. Submitted PDM grant for 2022 HMP update and Hazus analysis.	Removed/revised - combined into a new 2022 Hazus action

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Conduct or update natural hazard vulnerability assessments for critical facilities throughout the Philadelphia.	OEM	Potential	Yes	Yes	Ongoing annual action moving forward.	Update unavailable	Ongoing
Maintain city facility security criteria	OEM, RISK, DPP	Existing	No	Yes		Update unavailable	Removed - response focused and existing capability
Maintain and update asset classification and assessment program.	OEM	Existing	No	Yes		No update to report.	Removed - response focused and existing capability
Determine losses generated by various natural disasters and engineering effectiveness and cost-benefit of various mitigation measures using HAZUS-MH or other computer modeling software. Evaluate various building enhancements using prototypical Philadelphia building types.	OEM	Potential	Yes	Yes	Due to lack of funding, expertise, data, and staff time, the action was delayed since its inclusion in the 2012 HMP.	Not complete due to lack of funding and expertise.	Removed/revised - combined into a new 2022 Hazus action
Maintain trauma kits supplies.	OEM	Existing	No	Yes		Trauma kits are maintained on an as-need basis.	Removed/revised - combined into a new 2022 action
COOP Site enhancement, including electrical systems enhancement, systems synchronizing, and the installation of quick connects for generators.	OEM	Potential	No	Yes		Electrical systems have been enhanced and systems synchronized. Quick connects for generators have not been installed	Removed/revised - combined into a new 2022 action

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Creation of a specific asset inventory across Philadelphia City agencies which catalogues resources.	OEM	Potential	No	Yes		Update unavailable	Removed - not directly tied to mitigation - DPP has asset inventory
Maintain tactical tourniquet supplies and distribution.	PPD	Complete	Yes	Yes	Completed	N/A	Completed per earlier review
Offer RAMS training for PFD-EMS	PPD, PFD-EMS	Existing	No	Yes		Update unavailable	Removed - response focused
Create a mobile feeding and commodity distribution plan.	OEM	Potential	No	Yes		Still a priority, but not started due to lack of staff time available. Expected completiong by 2022.	Removed - response focused
Expand Multi-Assault, Counter Terrorism Action Cabilities (MACTAC) training program for patrol officers	PPD	Existing	No	Yes		Update unavailable	Ongoing
Purchase Glock-T17 force on force pistols	PPD	Complete	Yes	Yes	Completed	N/A	Completed per earlier review
Train Health and Human Service staff and partners in continuity of operations plan and mitigation measures.	OEM	Potential	No	Yes		No updates to report.	Removed - response focused
Conduct bridge inspections.	STREETS-HIGHWAY, PENNDOT	Existing	No	Yes		Ongoing	Removed/revised - similar actions combined
Conduct a flood risk analysis - compile/map all areas at PHL at greatest risk of flooding during 100-yr and 500-yr flood events	PHL	Potential	No	Yes		Update unavailable	Completed - PHL Climate Vulnerability Assessment complete in 2019

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Procure urban blast modelling tool		Removed	Yes	Yes	Action Removed in 2017. No longer feasible.	N/A	Removed per earlier review
Include information on projected changes in climate and increases in high heat days in health bulletins and outreach materials.	PDPH	Existing	No	Yes		Update unavailable	Removed/revised - combined into a new 2022 action
Update the Airport Flood Emergency Response Plan (AFERP) with Operations, Engineering, and Planning	PHL-DOA	Potential	No	Yes		Update unavailable	Removed/revised - similar actions combined
Meet quarterly with VOAD partners to maintain preparedness, ensure situational awareness, identify resource capabilities, and build stakeholder relationships pre-disaster.	OEM	Potential	No	Yes		Ongoing.	Ongoing
Monitor new tree watering contracts to ensure the trees have sufficient time to take root and establish themselves under warmer temperatures.	PPR	Existing	No	Yes		Update unavailable	Ongoing
Utilize City Works Trees to track real-time response and management of downed trees and vegetation	PPR	Existing	No	Yes		Update unavailable	Ongoing

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prior to, during, and following events.							
Host mass casualty/ decontamination workshop	OEM, PFD	Complete	No	Yes		N/A	Completed per earlier review
Host mass casualty/ table top exercise	OEM, PFD	Complete	No	Yes		N/A	Completed per earlier review
Host mass casualty/ decontamination functional exercise	OEM, PFD	Complete	No	Yes		N/A	Completed per earlier review
Update City of Philadelphia zoning maps.	L&I	Removed	No	Yes	Pending state involvement and support	12/17/2021. Suggest removing, covered by new 2022 action.	Removed/revised - combined into a new 2022 action
Formalize pre-event calls between OEM and other departments to coordinate response and support during extreme weather events	OEM	Complete	Yes	Yes	Completed	N/A	Completed per earlier review
Regularly mapping locations of vulnerable populations and using the information to target the location of community outreach to at-risk neighborhoods	OEM	Existing	No	Yes		OEM Maintains a GIS layer	Removed/revised - combined into a new 2022 action
Include public facilities in capital planning.	PCPC, DPP	Potential	No	Yes		Update unavailable	Removed - very general and covered in more specific acquire, elevate, and other mitigation technique action

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Create a brownfield reuse and mitigation plan and procedure.	Multiple agencies	Potential	No	Yes		Update unavailable	Ongoing
Partner with Community Groups such as local community organizations, including civic, business, town watch, faith-based, senior, special needs and tenant associations to promote emergency preparedness and mitigation efforts.	OEM	Existing	No	Yes		Ongoing. READYCommunity program has been offered in 13 communities.	Removed - existing capability
Provide public outreach throughout Philadelphia with READYhome and READYbusiness by presenting and tabling at community and private sector events.	OEM	Existing	Yes	Yes	READYHome, READYCommunity, and READYBusiness replaced the existing personal preparedness programs in 2016.	Ongoing. Since 2017, over 300 workshops have been offered in the community.	Ongoing - revised to include related action
Utilize district planning as a method to communicate about risks as Philadelphia2035 moves forward.	PCPC, OEM	Potential	No	Yes		Philadelphia2035 plans incorporates flooding risk in impacted neighborhoods.	Ongoing
Create zoning and development awareness programs to inform planning processes that may be impacted by hazardous material train derailments.	Multiple agencies	Potential	No	Yes		Update unavailable	Removed/revised - combined into a new 2022 action

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Target community outreach to at-risk individuals and communities with issue community-based bulletins, describing health risk and mitigation actions. Translate into most common languages in Philadelphia.	PDPH	Existing	Yes	Yes	Climate Change and Health adaptation strategy in progress.	Update unavailable	Removed/revised - combined into a new 2022 action
Coordinate with construction community for large scale emergency responses.	L&I, PCPC, OEM	Removed	No	Yes		Response focus; can remove.	Removed - see 2020 Review
Execute weekly equipment testing & exercises.	OEM	Existing	Yes	Yes	Ongoing	The Regional Integration Center (RIC) conducts tests of their equipment weekly. Logistics equipment is tested monthly.	Removed - response focused
Develop and issue community-based bulletins, describing health risk and actions to minimize morbidity and mortality. Bulletins translated into 17 languages.	PDPH	Existing	Yes	Yes	Limited implementation due to competing priorities and lack of funding.	Update unavailable	Removed/revised - similar actions combined
Update inundation mapping.	L&I, PCPC, OEM, PWD	Existing	No	Yes		The FRMTF secured support from the Silverjacks to conduct inundation mapping. Proposal will be complete by March 2020. PWD is the lead.	Ongoing - The FRMTF secured support from the Silverjacks to conduct inundation mapping. Proposal will be complete by March 2020. PWD is the lead.

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Develop health bulletins for seasonally appropriate risks.	PDPH	Complete	Yes	Yes	Completed.	N/A	Completed per earlier review
Creation of a tactical guide for flood pre-event actions and response activities	OEM/ Multiple Agencies	Potential	No	Yes		Actions are outlined in the city's Severe Weather Plan. Still a need for a flooding specific tactical guide.	Removed - response focused
Increasing Health Alert Network Recipients.	PDPH	Existing	Yes	Yes	Ongoing	Update unavailable	Removed/revised - combined into a new 2022 action
Provide redundant power in emergency operations (Portable 8K generator).	OEM	Complete	Yes	Yes	Purchases are ongoing as equipment updates are needed.	Completed. OEM purchased 17, 7K Generators and 2, 300K generators.	Completed per earlier review
Maintain mobile command vehicle.	OEM	Existing	Yes	Yes	Ongoing	Monthly functional tests are conducted and mechanical maintenance is performed quarterly. Every two years, technology on board the mobile command vehicle is refurbished or replaced.	Removed - response focused
Determine low-lying substation vulnerabilities and outline options for adaptation and mitigation; coordinate with DOE on their vulnerable infrastructure studies	OEM	Potential	No	Yes		Current projects include: Germantown Flood Relief Study, PWD's Northern liberties flood relief project, and ongoing H&H analysis at PWD. 2019 Plumbing Code adopted a standard to require back water prevention in all new or renovated structures with plumbing	Removed/revised - combined into a new 2022 action

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						fixtures below the fresh air inlet.	
Preparing, adopting, implementing, and updating a comprehensive long-term recovery plan to direct how and where state or federal disaster recovery funds are used to rebuild resilient communities	OEM	Potential	No	Yes		Update unavailable	Removed/revised - combined into a new 2022 action
Prioritize Emergency Shelters locations by applicable factor (e.g. projected demand).	OEM	Complete	Yes	Yes	Completed.	N/A	Completed per earlier review
Purchase satellite communication (Secondary Communications).	OEM	Complete	Yes	Yes	OEM completed the purchase of secondary communications since 2012 and updates the equipment cache as needed to maintain functionality.	N/A	Completed per earlier review
Identify dead and falling trees along pathways and roads for removal.	PPR	Potential	No	Yes		Update unavailable	Removed - duplicate

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Establish a policy based on need and funding availability for a regular pruning cycle for city trees.	PPR	Potential	No	Yes		Update unavailable	Ongoing
Enhance the capability and reach of the reverse 9-1-1 telephone notification system.	STREETS	Complete	Yes	Yes	Completed in 2014 with the purchase of Everbridge.	N/A	Completed per earlier review
Establish open end contracts with construction companies for emergency vegetation management.	PPR	Potential	No	Yes		Update unavailable	Removed - response focused
Distribute and educate public on Ready Philadelphia guides for general preparedness and business continuity information.	OEM	Existing	Yes	Yes	Ongoing	Ongoing. Educational materials are distributed at all workshops and via OEM's website and social media.	Removed/revised - combined into a new 2022 action
Support regulations to improve resiliency of buildings in areas facing increased risk of flood with the Flood Risk Management Task Force	PCPC	Removed	No	Yes		Updated to "Remove." The content of this action is now included in a new 2022 action for PCPC to align planning regulations, plans, and incentives around the City's risk mitigation efforts.	Removed - see 2020 Review
Pilot study the growth of Southern plant species with sustainable planting practices in preparation for increasing temperatures over the next century.	PPR	Existing	No	Yes		Update unavailable	Ongoing

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Create a guide on steps that commercial and residential property owners can take to make their existing buildings more resilient to climate change	OOS	Potential	No	Yes		Update unavailable	Removed/revised - combined into a new 2022 action
Inspect trees within 100 ft. of walkways and roadways for signs of the emerald ash borer and treat affected trees every three years.	PPR	Existing	No	Yes		Update unavailable	Ongoing
Purchase event/site specific remote video cameras for better situational awareness.	OEM	Complete	Yes	Yes	Completed.	N/A	Completed per earlier review
Examine and evaluate the strategy of using rolling easements to assist in adapting to the potential consequences of sea level rise.	OOS	Potential	No	Yes		No updates	Ongoing
Acknowledging and addressing climate change issues, concerns, and impacts in Philadelphia2035 district plans.	PCPC	Complete	No	Yes		Completed. New comprehensive plan is included in new action.	Completed per earlier review
Strengthen the traffic signals beyond the national standards in reference to wind tolerance.	STREETS	Existing	Yes	Yes	As intersections are upgraded, wind tolerant traffic signals are used. It is anticipated for completion in the next 20 years.	Ongoing	Ongoing

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Evaluate properties buyout feasibility for structures that are damaged or at high risk of damage from sea level rise or storm events both reactively over time as properties are damaged, or proactively for properties that are at a high risk for flooding.	Multiple Agencies	Potential	No	Yes		2019 FEMA CTP grant award to conduct a repetitive loss analysis for Eastwick, project to be completed in early 2021.	Completed
Development of COOP Planning for PDPH internally to keep Health Dept. running after disaster to prevent secondary infections/illness.	PDPH	Existing	Yes	Yes	COOP plan in place, sustainment of operations during severe pandemic limited.	Update unavailable	Removed/revised - combined into a new 2022 action
Continuously update and improve zoning maps and codes to encourage uses, buildings, and site improvements that reduce exterior and interior heat island effects.	PCPC	Removed	No	Yes		Updated to "Remove." The content of this action is now included in a new 2022 action for PCPC to "align planning regulations, plans, and incentives around the City's risk mitigation efforts.	Removed/revised - combined into a new 2022 action
Upgrade Snow HQ technology including and use of the City's police/traffic camera system.	STREETS	Complete	Yes	Yes	Completed in 2015.	N/A	Completed per earlier review

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Develop planning and zoning recommendations for hazardous material transportation throughout the City.	Multiple agencies	Potential	No	Yes		Update unavailable	Removed/revised - combined into a new 2022 action
Maintain portable EOC in a Box.	OEM	Existing	Yes	Yes	OEM maintains equipment and updates stock as needed.	OEM maintains equipment and updates stock as needed. A functional test of the equipment is conducted yearly.	Removed - response focused
Increase subscription to the Everbridge ReadyPhiladelphia system	OEM	Existing	Yes	Yes	ReadyPhiladelphia replaced the ReadyNotifyPA system in 2015.	The number of READYPhiladelphia subscribers continues to rise every year.	Removed/revised - combined into a new 2022 action
Promote sustainable, mitigation-driven redevelopment for City-acquired properties.	PCPC	Potential	No	Yes		Update unavailable	Removed/revised - combined into a new 2022 action
Create a hazard event database to capture description, severity, location, impact, and potential loss/damage estimate from an event. This data will be used to update the hazard analysis and mitigation actions for Philadelphia, as well as allow the city to be better prepared for future events.	OEM	Potential	Yes	Yes	Due to lack of funding and staff time, the action was delayed since its inclusion in the 2012 HMP.	Update unavailable	Ongoing - funding/staff time required

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Install traffic signal devices which adhere to national standards for wind tolerance.	STREETS	Existing	Yes	Yes	Ongoing. As intersections are upgraded, wind tolerant traffic signals are used. It is anticipated for completion in the next 20 years.	Ongoing	Removed - duplicate
Perform structural repairs to Valley Green Road and Spring Lane to improve safety of structure or surrounding areas, eliminate or reduce erosion issues, help to regulate supply for drinking water intakes, reduce swimming hazards, and reduce flooding damage to surrounding areas.	PWD	Complete	Yes	Yes	Completed	N/A	Completed per earlier review
Complete stream and creek restoration projects to reduce impact of historic flooding hazards along Valley Green Road and Spring Lane.	PWD	Existing	No	Yes		The Flood Risk Management Task Force (FRMTF) and PA State Historic Preservation Office (SHPO) conducted a flood mitigation charette for the historic Valley Green Inn, located along the Wissahickon River in Fall 2019. Several potential contractors submitted proposals for flood mitigation techniques for this historic structure. Phase II of this project will involve	Ongoing

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						following through with one of the proposed plans.	
Redesign roadways and bridges to lesson occurrence/impact of flooding.	STREETS	Existing	Yes	Yes	Upkeep of roadways is ongoing, with bridge inspections occurring for scour and structural deficiencies.	Ongoing	Ongoing
Upgrade City Emergency Operations Center.	OEM	Complete	Yes	Yes	Completed in 2012	N/A	Completed per earlier review
Utilize ReadyPhiladelphia, an advanced warning system which provides emergency text and email alerts.	OEM	Existing	Yes	Yes		READYPhiladelphia is active and updated. This system continues to be used during both planned and unplanned events and emergencies.	Removed/revised - combined into a new 2022 action

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Coordinate and provide public outreach on mitigation strategies the public can take to reduce or eliminate the impact of hazards on their services and infrastructure. Opportunities to educate the public include conferences, OEMs website, social media, and presentations.	OEM	Potential	Yes	Yes	Since 2012, public outreach coordination through OEM's website, social media, and public presentation is ongoing. Efforts have expanded into READYCommunity outreach strategies.	OEM continues to provide public outreach coordination through OEM's website, social media and preparedness programs.	Removed/revise - combined into a new 2022 action
Purchase a communications system capable of notifying and communicate critical emergency information and actions to be taken by airport employees and the surrounding communities to reduce the impacts prior to, during, or in response to an emergency or disaster.	PHL	Complete	Yes	Yes	Completed in July 2014 through the purchase of Everbridge under the Operating Budget	N/A	Completed per earlier review
Equip drawbridges with back-up generators	STREETS	Potential	Yes	Yes		Project has not been started.	Ongoing
Purchase two VMS signs for deployment prior to and during emergencies and events to promote public safety and awareness.	OEM	Potential	No	Yes		Currently utilize resources from partner agencies. Resource need met with local resources.	Ongoing

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Complete stream and creek restoration projects to reduce impact of historic flooding hazards along Cobbs Creek Reaches 1 to 3.	PWD	Existing	No	Yes		Change - take out "eliminating historic flooding hazards". This is not the goal of the project.	Removed/revise - similar actions combined
Maintain portable generators for key traffic intersections.	STREETS	Existing	Yes	Yes	Ongoing, some higher volume traffic intersections have back-up batteries installed	Ongoing	Ongoing
Implement program to track and study areas impacted by natural disasters using the RIC data and GIS technology.	OEM	Potential	Yes	Yes	Ongoing since 2012.	OEM maintains a Damager Tracker GIS tool that allows us to track damage across the city from severe weather events.	Removed/revise - combined into a new 2022 action
Upgrade equipment and vehicles used in storm operations.	STREETS	Existing	Yes	Yes	Ongoing	Ongoing	Removed/revise - similar actions combined
Perform Cobbs Creek Stream Channel Rehabilitation Reaches 6 to 8 in Phase 2 of the project to improve safety of structure or surrounding areas, eliminate or reduce erosion issues, help to regulate supply for drinking water intakes, reduce swimming hazards, and reduce flooding damage to surrounding areas.	PWD	Existing	No	Yes		This project is on hold. The location of this project is on the border of Philadelphia County and Delaware County. This has created many challenges around land use. Project has been on hold for several years.	Removed/revise - similar actions combined

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Establish a smart detour plan for flooding of Wissahickon Creek, Schuylkill River and Cobbs Creek.	STREETS	Potential	Yes	Yes	A study must be conducted prior to the smart detour is put in place. The project is still a priority, and is subject to funding.	Project has not been started.	Ongoing
Train L&I in damage assessment policies and procedures.	L&I	Removed	No	Yes		Remove. This is more recovery focused. This is on-going capability.	Removed - see 2020 Review
Complete stream and creek restoration projects to reduce impact of historic flooding hazards Cobbs Creek Stream Channel Reaches 6 to 8 in Phase 2.	PWD	Existing	No	Yes		Change - take out "eliminating historic flooding hazards". This is not the goal of the project.	Ongoing - revised to include similar actions
Develop guides for all-hazards preparedness, hazard specific information, business continuity information, as well as guides for specific vulnerable populations. Brochures will be offered in up to seven languages, large print, Braille and auto CDs.	OEM	Potential	Yes	Yes	Ongoing	Updates to preparedness guides are conducted on an as need basis. A community preparedness workbook for READYCommunity was developed in the summer of 2017. Guides have not yet been offered in auto CDs.	Removed/revised - combined into a new 2022 action
Enhance fatality management by obtaining body bag stockpile, morgue and forensic expansion and collection.	PDPH	Existing	Yes	Yes	Limited implementation due to competing priorities and lack of funding.	Update unavailable	Removed - response focused

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Hire more doctors and nurses for health centers and outreach.	PDPH	Existing	Yes	Yes	Limited implementation due to competing priorities and lack of funding.	Update unavailable	Removed - response focused
Establish an open-end contract to purchase or rent material/equipment for unforeseen events.	STREETS	Potential	Yes	Yes		Update unavailable	Removed/revised - similar actions combined
Upgrade equipment and vehicles for Brine usage in storm operations.	STREETS	Existing	Yes	Yes	Ongoing	Ongoing	Removed/revised - similar actions combined
Install battery back-up traffic signal controllers (75,000 each) 10% of signals in City.	STREETS	Potential	Yes	Yes	Battery back-up installation has started and is ongoing	Battery back-up installation is in progress and ongoing	Ongoing
Phase V of Northern Liberties infrastructure projects, which affects Northern Liberties and surrounding neighborhoods water infrastructure capabilities.	PWD	Existing	No	Yes		Under construction. Targeted completion date of 2020.	Ongoing - Phase 5 still under construction due to Verizon pole/line being relocated
Purchase portable trailer lights for each Streets Department facility or yard.	STREETS	Complete	Yes	Yes	Portable light trailers have been purchased for three yards. Additional purchases needed to complete project.	Project complete.	Completed per earlier review

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Conduct additional medical countermeasure exercises	PDPH, OEM	Potential	No	Yes		Philadelphia Department of Public Health conducts yearly closed and open POD trainings that OEM participates in. PDPH Medical Countermeasure Plan identifies POD locations for vaccine distribution.	Removed - response focused
The final phase of a six-phase flood mitigation project proposes new sewer infrastructure and green stormwater infrastructure systems in the Northern Liberties and South Kensington commercial and residential neighborhoods.	PWD	Existing	No	Yes		In design.	Ongoing - Design at 90% with a bid year of FY 2023. The Phase 6 Project will be submitted for a 2021 BRIC Grant.
Enhance the EOC in a Box.	OEM	Potential	Yes	Yes	Mobile EOC and EOC in a box continues to be enhanced, updated, and replaces as needed.	Mobile EOC and EOC in a box continues to be enhanced, updated, and replaces as needed.	Removed - response focused
Perform Tacony Creek Stream Rehabilitation Reaches 4 and 5 to improve safety of structure or surrounding areas, eliminate or reduce erosion issues, help to regulate supply for drinking water intakes, reduce swimming hazards, and	PWD	Existing	No	Yes		Design 60% complete.	Ongoing - Project is in design (50%). Project had been put on hold in 2020 with location conflicts.

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
reduce flooding damage to surrounding areas.							
Procure and install CCTV cameras for the Triplex and Tunnel	DPP	Potential	No	Yes		Update unavailable	Removed - response focused
Complete stream and creek restoration projects to reduce impact of historic flooding hazards along Tacony Creek.	PWD	Existing	No	Yes		Change - take out "eliminating historic flooding hazards". This is not the goal of the project.	Ongoing
Expand community immunizations capacity.	PDPH	Existing	Yes	Yes	Limited implementation due to competing priorities and lack of funding.	Update unavailable	Completed
Procure a hi-rail bucket truck	STREETS	Potential	No	Yes		Project has not been started.	Removed/revised - response focused and included in more general action
Expand scope of practice and facility capacity for City Health Centers.	PDPH	Existing	Yes	Yes	Limited implementation due to competing priorities and lack of funding.	Update unavailable	Ongoing
Procure additional unites of level B PPE for surge operators	PFD, PPD, OEM	Potential	No	Yes		Update unavailable	Ongoing

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Expand lab capacity to rapidly identify and subtype organisms.	PDPH	Existing	Yes	Yes	Ongoing, but limited implementation due to funding restrictions.	Update unavailable	Ongoing
Elevate electrical and HVAC equipment at Waterworks.	PWD	Potential	No	Yes		no updates to report	Removed/revised - similar actions combined
Ensure adequate material and equipment is available to repair and replace street lights and traffic poles & signs.	STREETS	Existing	Yes	Yes	Ongoing	Ongoing	Ongoing
Buy equipment to upgrade capability to survey flood prone bridges and roads.	STREETS	Potential	Yes	Yes		Project has not been started.	Removed/revised - similar actions combined
Perform structural repairs to dams and/ or removal of fishway structure at Fairmont Dam to improve safety of structure or surrounding areas, eliminate or reduce erosion issues, help to regulate supply for drinking water intakes, reduce swimming hazards, and reduce flooding damage to surrounding areas.	PWD	Existing	No	Yes		No structural repairs have been made at this time. Ongoing maintenance is conducted such as removal of debris. In 2018, buoys were installed upstream and downstream of the dam to warn boaters and kayakers of nearby dam.	Ongoing - bid planned for 2022

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Construct ground water interceptors to capture water seeping from rock outcrops to prevent constant ice accumulation on Lincoln and Kelly Drives.	STREETS/ PPR	Potential	Yes	Yes	Lincoln Drive has a plan in place for the project in the event funding becomes available. Kelly Drive is partially funded, but requires additional funding for implementation.	Some progress has been made. Ongoing work is still required	Ongoing
Complete smaller sewer and green infrastructure projects whose impact is localized to discreet areas. Over one hundred are currently in design stages.	PWD	Existing	No	Yes		Ongoing	Ongoing
Procure traffic detour modelling software	STREETS, OEM	Potential	No	Yes		Project has not been started.	Removed - response focused
Procure pedestrian modelling software	OEM	Potential	No	Yes		Update unavailable	Removed - response focused
Ongoing identification of larger infrastructure projects whose impact effects large areas of the city through PWD studies.	PWD	Existing	No	Yes		Germantown Flood Relief Study conducted to evaluate alternative solutions to flooding. Recommendations and a report on the findings of the study have been completed. Next steps in the project are being determined.	Ongoing - The 21st Street Sewer from Stenton Ave to Godfrey will be reconstructed to reduce a choke point of the collection system. Target bid year of FY2023.
Conduct mass casualty exercises	PFD, PPD, OEM	Potential	No	Yes		OEM hopes to conduct an exercise in the next year. OEM participated in a Mass Casualty Exercise conducted by American	Removed - response focused

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
						Red Cross in February 2020.	
Perform structural repairs to dams and/ or removal of Flat Rock Dam to improve safety of structure or surrounding areas, eliminate or reduce erosion issues, help to regulate supply for drinking water intakes, reduce swimming hazards, and reduce flooding damage to surrounding areas.	PWD	Existing	No	Yes		Design complete and going out for bid.	Ongoing - Funding was delayed in FY2020, but the 60006 is currently in Projects Control. Funding was initiated on 9/29/2021.
Expand cache of body bags	PDPH-MEO, OEM	Potential	No	Yes		Update unavailable	Removed - response focused
Identify additional stream and creek restoration projects to aid in eliminating historic flooding hazards through area studies.	PWD	Existing	No	Yes		Partial dam removal of the Boulevard Dam and Juniata Golf Course Dam. Both projects are in design.	Ongoing - 40760 at 70% Design with a bid year of FY2023; 40777 at 90% Design with a bid year of FY2023
Purchase redundant alert notification system for extreme weather to notify City owned facilities (NOAA Radio).	OEM	Complete	Yes	Yes	Completed since 2012	N/A	Completed per earlier review

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Perform structural repairs to dams and/ or removal of Fairmont Dam to improve safety of structure or surrounding areas, eliminate or reduce erosion issues, help to regulate supply for drinking water intakes, reduce swimming hazards, and reduce flooding damage to surrounding areas.	PWD	Existing	No	Yes		No structural repairs have been made at this time. Ongoing maintenance is conducted such as removal of debris	Removed/revised - similar actions combined
Conduct large-scale hot zone IED operation training	PPD-BDU, PFD	Potential	No	Yes		Update unavailable	Removed - response focused
Moore St. drainage from Christopher Columbus to River infrastructure project to improve capabilities in the area.	PWD	Existing	No	Yes		70% complete. Targeted completion date of 2020.	Ongoing - Design at 70%. Planning is re-evaluating the project for effectiveness with new SFR Modeling techniques.
Implement Ready Region, a program aimed at educating the public on preparedness.	OEM	Removed	Yes	Yes	Action Removed in 2017. Ready Region programs ceased.	N/A	Removed per earlier review
Deploy trauma kits to all commercial CIKR assets	OEM	Removed	No	Yes		Action Removed 2020. Not a priority at this time. OEM will encourage and promote the use of trauma kits at CIKR.	Completed - see 2020 Review
Expand cot and DME/G caches	OEM	Potential	No	Yes		Currently, OEM maintains 945 cots, 184 wheelchairs and 146 walkers.	Removed - response focused

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Continue Emergency Rest Center Train the Trainer which includes Ready Philadelphia curriculum which promotes mitigation strategies for individuals and families.	OEM	Removed	Yes	Yes	Action Removed in 2017. Action components are consolidated into READYHome, READYBusiness, and READYCommunity programs.	N/A	Removed per earlier review
Distribute Emergency Rest Center supply kits containing emergency supplies in the event of evacuation.	OEM	Removed	Yes	Yes	Action Removed in 2017. Supply kits distributed by American Red Cross.	N/A	Removed per earlier review
Implement an armed Triplex security force	PPD	Potential	No	Yes		Update unavailable	Removed - response focused
Mitigation Training Coordination: Regional Volunteer Management Coordinators may share resources and mitigation training opportunities.	OEM	Removed	Yes	Yes	Action Removed in 2017. Program components are consolidated into READYHome, READYBusiness, and READYCommunity programs.	N/A	Removed per earlier review
Conduct crude by rail functional exercises and use outcomes to identify opportunities to strengthen plans and training.	OEM, PFD	Potential	No	Yes		No updates to report. Other exercises are a priority in the next year. OEM and Philadelphia public safety agencies have participated in private sector exercises in the past year.	Removed - response focused

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Pre-identify and target potential ERCs which are located along Philadelphia evacuation routes, and offer preparedness and mitigation training, and discuss business continuity.	OEM	Removed	Yes	Yes	Action Removed in 2017. Program components are consolidated into READYHome, READYBusiness, and READYCommunity programs.	N/A	Removed per earlier review
Conduct ongoing mass decontamination exercises	PFD, OEM	Potential	No	Yes		No updates to report. Other exercises are a priority in the next year. OEM and Philadelphia public safety agencies have participated in private sector exercises in the past year.	Removed - response focused
Incorporate Flood Safety Training into Community Emergency Response Team Curriculum: Adapt CERT curriculum to educate team members on strategies that will mitigate the impact of flooding on the community.	OEM	Removed	Yes	Yes	Action Removed in 2017. CERT program ceased. READYCommunity encompasses training opportunities based off local hazards.	N/A	Removed per earlier review
Procure and issue tourniquets to all PFD members	PPD, PFD, OEM	Potential	No	Yes		Update unavailable	Removed - response focused

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Incorporate Flood Safety Training into Community Emergency Response Team Curriculum: Adapt CERT curriculum to educate team members on strategies that will mitigate the impact of flooding on the community.	OEM	Removed	Yes	Yes	Action Removed in 2017.CERT program ceased. READYCommunity encompasses training opportunities based off local hazards.	N/A	Removed per earlier review
Procure and install Triplex magnetometers	PPD	Potential	No	Yes		Update unavailable	Removed - response focused
Conduct mitigation training for all Regional Volunteer Management Coordinators so they may share resources and mitigation training opportunities.	OEM	Removed	Yes	Yes	Action Removed in 2017.Regional Volunteer Management Coordinator Program no longer in place.	N/A	Removed per earlier review
Upgrade pickup trucks for plowing and salting when purchased.	PWD/ OFM	Potential	No	Yes		Update unavailable	Removed - response focused
Partner with the CERT program once it is online in Philadelphia and continue to partner with other local community organizations, including civic, business, town watch, faith-based, senior, special needs and tenant associations to promote emergency preparedness and mitigation strategies.	OEM	Removed	Yes	Yes	Action Removed in 2017.CERT program ceased. READYCommunity coordinates with local community organizations to promote emergency preparedness and mitigation strategies.	N/A	Removed per earlier review

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Expand MACTAC training	PPD, PFD, OEM	Potential	No	Yes		Update unavailable	Removed - duplicate
Incorporate Business Continuity into ERC train the trainer: Provide training and a strategy for ERC's to assure continuity of services.	OEM	Removed	Yes	Yes	Action Removed in 2017. Program ceased. READYBusiness encompasses training and education for business continuity planning.	N/A	Removed per earlier review
Procure additional light and air unit for hazardous material response purposes	PFD	Potential	No	Yes		No updates	Removed - response focused
Partner the CERT program, ERC Program, and VOAD partner agencies with local community organizations including civic, faith-based, and tenant associations, to promote mitigation strategies.	OEM	Removed	Yes	Yes	Action Removed in 2017. CERT program ceased. Meet quarterly with VOAD partners to maintain preparedness, ensure situational awareness, identify resource capabilities, and build stakeholder relationships pre-disaster.	N/A	Removed per earlier review
Procure three more high reach bucket trucks	STREETS	Potential	No	Yes		Project Complete	Removed/ revised - response focused and included in more general action
Purchase additional secondary communication systems (i.e. radios).	OEM	Potential	Yes	Yes	Additional secondary communication devices have been purchased since 2012 and continue to be replaced as needed.	Additional secondary communication devices have been purchased since 2017 and continue to be replaced as needed.	Completed - see 2020 Review

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Pilot Corporate CERT: CERT teams based in businesses with supplemental training focused on business continuity and workplace mitigation strategies such as protecting utility services, redundant communication, and continuity of business services.	OEM	Removed	Yes	Yes	Action Removed in 2017.CERT program ceased.	N/A	Removed per earlier review
CERT Community Mapping: Community teams may pre-identify critical infrastructure and offer mitigation strategies including business continuity and Ready Philadelphia information.	OEM	Removed	Yes	Yes	Action Removed in 2017.CERT program ceased.	N/A	Removed per earlier review
Procure two additional foam tenders	PFD	Potential	No	Yes		Update unavailable	Removed - response focused
Upgrade drainage capacity on Streets Department maintained drains.	STREETS	Removed	Yes	Yes	Action Removed in 2017.Drainage upgrades have been found to be less helpful than anticipated in 2012. Different storm water management solutions are being explored instead.	N/A	Removed per earlier review
Maintain regional MOU's	Multiple Agencies	Existing	No	Yes		Ongoing	Removed - existing capability
Procure two refrigerated semi-tractor trailers	PDPH-MEO, PPD, FLEET	Potential	No	Yes		Update unavailable	Removed - response focused

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Eastwick drainage and flooding prevention infrastructure design.	PWD	Existing	No	Yes		Partnering with the Army Corps to conduct a feasibility student which was started in November 2019 with a targeted completion date of the feasibility study in 2020	Ongoing - The study has been delayed to contamination and real estate concerns with the alignment of the levee.
Enlarge culverts of the Poquessing Creek tributaries to protect roadway and residences.	STREETS	Potential	Yes	Yes		Project has not been started.	Ongoing
Offer active shooter training program for patrol officer	PPD	Existing	No	Yes		Update unavailable	Removed - duplicate
Purchase Cyclomedia software to assist in the identification of high priority areas for the removal of dead and falling trees.	PPR	Potential	No	Yes		Update unavailable	Completed
Purchase force on force face protectors	PPD	Complete	Yes	Yes	Completed	N/A	Completed per earlier review
Intake booming materials	PWD	Potential	No	Yes		Update unavailable	Ongoing
Purchase force on force throat protectors	PPD	Complete	Yes	Yes	Completed	N/A	Completed per earlier review
Conduct a follow-on functional 3-day IED exercise	PPD-BDU, OEM	Potential	No	Yes		No updates to report.	Removed - response focused
Implement emergency and non-emergency generator engine rehabilitation and electrical upgrades.	PHL-DOA	Potential	No	Yes		Update unavailable	Ongoing - combined with another airport generator action

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Purchase force on force converting bolts for AR-15	PPD	Complete	Yes	Yes	Completed	N/A	Completed per earlier review
Install electrical substation upgrades with flood control at A-East	PHL-DOA	Potential	No	Yes		Update unavailable	Ongoing - in design
Purchase 9mm force on force marking rounds	PPD	Complete	Yes	Yes	Completed	N/A	Completed per earlier review
Upgrade/repair stormwater infrastructure near terminal complex.	PHL-DOA	Potential	No	Yes		Update unavailable	Removed/revised - similar actions combined
Conduct hydraulic modeling.	PWD	Existing	No	Yes		PWD Early Warning System allows users to understand the likely pathway and speed of movement of a water pollution event in rivers. It uses real time water flow information to tell downstream water systems how quickly a spill event might arrive. It conservatively assumes that the pollutant/spill will travel the same way as does the water in the rivers. Importantly, because the Delaware River is tidal up to Trenton NJ, EWS 3.0 uses NOAA climate and estuary models to predict the real time ebb and flow of the Delaware river. This allows	Ongoing

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
						good prediction of how pollution might move when in tidal waters.	
Implement and install an intake contamination detection system.	PWD	Existing	No	Yes		The Early Warning System has tested real time monitoring of some conventional water quality elements at the Queen Lane and Baxter water treatment plants, and has shown the ability to make available real-time water quality information. This work has been conducted as “proof of concept” of a range of EWS capabilities.	Removed/revised - combined into a new 2022 action

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Improve and upgrade Southwest Water Pollution Control Plant security system Gate Controls and purchase additional cameras to prevent theft of chemicals, contamination of treated drinking water, and damage to critical infrastructure.	PWD	Potential	No	Yes		no updates to report	Removed/revised - combined into a new 2022 action
Maintain and utilize early warning system	PWD	Existing	No	Yes		PWD's Early Warning System has recently implemented a new and improved design to simplify the process of reporting a water pollution event, and viewing information about reported water quality events. More importantly, EWS 3.0 is now accessible and fully functional from smart phones and mobile devices (such as tablets and iPads.), in addition to laptop and desktop computers that were previously supported. In addition, EWS now features more accurate tidal modeling, and calculates the speed of travel of spills and pollution in tidal waterways much more	Ongoing

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
						quickly and precisely. EWS has also improved its pollution event mapping, using improved Geographic Information System features.	
Improve and upgrade Belmont Water Treatment Plant truck turn around to prevent theft of chemicals, contamination of treated drinking water, and damage to critical infrastructure.	PWD	Potential	No	Yes		no updates to report	Removed/revised - combined into a new 2022 action

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Replace the fence around the Upper Roxborough water facility to prevent theft of chemicals, contamination of treated drinking water, and damage to critical infrastructure.	PWD	Potential	No	Yes		no updates to report	Ongoing
Maintain safe roadways and bridges through roadway milling and paving capital projects.	STREETS-HIGHWAY	Existing	No	Yes		Ongoing	Ongoing
Maintain and update electricity disruption plan	OEM	Existing	No	Yes		The electricity plan was updated in Fall 2019 and will continue to be updated on an ongoing basis.	Completed - see 2020 Review
Procure wastewater system HME sensors	PWD, OEM	Potential	No	Yes		no updates to report	Ongoing
Maintain Tier II Reporting and GIS program	OEM	Existing	No	Yes		Tier II reporting is ongoing throughout the year. Tier II facilities must have paperwork and plans every year by March 1st. A GIS layer of Tier II facilities is updated yearly.	Ongoing
Procure ZBV backscatter unit	PPD-BDU, OEM	Potential	No	Yes		Update unavailable	Removed - response focused
PPD Public Areas - Bullet Proof Glazing.	DPP, PPD	Complete	Yes	Yes	Completed	N/A	Completed per earlier review
Install backup generators at West Oak Lane to ensure operations during power outages.	PWD	Potential	No	Yes		no updates to report	Ongoing - construction started

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
PPD Public Areas - Wall reinforcement.	DPP, PPD	Complete	Yes	Yes	Completed	N/A	Completed per earlier review
Increase standoff distance at City Hall Apron	DPP, PPD, OEM	Potential	No	Yes		Update unavailable	Removed - response focused
Install secured area keypad mag locks.	DPP, PPD	Existing	No	Yes		Update unavailable	Removed - response focused
Flood Prevention for Electrical Substations in Terminal A-East: installing a new 15 HP, 1200 GPM to increase the storm water pumping capacity, furnishing and installing of flood prevention planks at the substation entrances, furnishing and installing the four new oil-filled switches to allow substations to be isolated electrically and replacement of existing fire alarm and fire protection system with a new pre-action sprinkler system	PHL-DOA	Potential	No	Yes		Update unavailable	Removed - duplicate and included in more general action
Maintain and update Human Services Recovery Plan.	OEM, PFD	Existing	No	Yes		Plan is updated every 3 years and as needed. Next update will be completed within the next 6 months.	Removed - response focused and existing capability

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Improve and upgrade Northeast Water Pollution Control Plant through lighting replacement to prevent theft of chemicals, contamination of treated drinking water, and damage to critical infrastructure.	PWD	Potential	No	Yes		no updates to report	Removed/revised - combined into a new 2022 action
Maintain and update Mass Care and Shelter Plan	OEM	Existing	No	Yes		Plan is updated yearly. The last update was completed January 2020.	Removed - response focused and existing capability
Implement underground inter-operational communications development	PPD-BDU, OEM	Potential	No	Yes		As of December 2019, underground inter-operational communication systems were improved. PPD, PDF, SEPTA Police and OEM have the ability to communicate underground in certain underground transportation systems in Philadelphia.	Completed - See 2020 Review
Install CCTV cameras.	DPP, PPD	Existing	No	Yes		Update unavailable	Removed - response focused
Expand the EOC to accommodate 90 liaisons	OEM	Potential	No	Yes		New EOC is being scoped to accommodate at least 80 liaisons with an additional 54 seats in breakout spaces. Estimated date of completion is January 2022.	Removed - response focused

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Install access control keycard system.	DPP, PPD	Existing	No	Yes		Update unavailable	Removed - response focused
Improve and upgrade Northeast Water Pollution Control Plant Balfour Street Entrance to prevent theft of chemicals, contamination of treated drinking water, and damage to critical infrastructure.	PWD	Potential	No	Yes		no updates to report	Removed/revised - combined into a new 2022 action
Upkeep PFD Hazmat training and equipment	PFD	Existing	No	Yes		Update unavailable	Ongoing
Elevate electrical and HVAC equipment at Queen Lane Raw Water Intake switch gear and generator.	PWD	Potential	No	Yes		Update unavailable	Removed - Project no longer applicable. Queen Lane will be reconstructed as part of long term project.
Upkeep PFD HMAU training and equipment	PFD	Existing	No	Yes		Update unavailable	Removed - duplicate
Install backup generators and switchgear at Queen Lane Raw Pump Station to ensure operations during power outages.	PWD	Potential	No	Yes		no updates to report	Ongoing - planned to be installed in next 5 years
Establish and maintain SECOM Network	OEM	Existing	No	Yes		SECOM Network has been established and is maintained. This is a regional priority.	Completed - see 2020 Review and maintenance is a response focus

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Upgrade P-796 at the Navy Yard Design to handle increased flows from wet weather events.	PWD	Potential	No	Yes		no updates to report	Ongoing - 41154 which includes the reconstruction of the force main from PS609 to Broad Street is under construction. Upgrading PS796 is scheduled to be bid in FY2027.
Establish and maintain an Emergency Operations Plan	OEM	Existing	No	Yes		EOP was last updated in June 2015.	Removed - response focused and existing capability
Elevate electrical and HVAC equipment at rehabilitation of Baxter Emergency Intake Building Equipment.	PWD	Potential	No	Yes		no updates to report	Completed
Establish and maintain an Emergency Operations Center Procedures	OEM	Existing	No	Yes		New Response Program Manager will be updating processes and procedures in the EOC within the next 18 months.	Removed - response focused and existing capability
Rehabilitate Baxter Emergency Intake Building Equipment to ensure reliable source during droughts and winter storms.	PWD	Potential	No	Yes		no updates to report	Removed - duplicate
Rehabilitate Baxter Emergency Intake building equipment to make the structure more resilient in order to handle intake during extreme weather events.	PWD	Potential	No	Yes		no updates to report	Completed

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Upkeep PFD Special Operations Command training and equipment	PFD	Existing	No	Yes		Update unavailable	Removed - response focused
Improve and upgrade 29th Street Complex Storage Units and revised traffic flow to prevent theft of chemicals, contamination of treated drinking water, and damage to critical infrastructure.	PWD	Potential	No	Yes		no updates to report	Removed/revised - combined into a new 2022 action
Establish, maintain, and train a Homeland Security Unit	PPD	Existing	No	Yes		Update unavailable	Removed - response focused
Upgrade Mingo Creek Pumping Station to handle increased flows from wet weather events.	PWD	Potential	No	Yes		no updates to report	Ongoing - project being bid in FY2022
Implement an Asset Management System (under development)	PHL-DOA	Potential	No	Yes		Update unavailable	Removed - response focused
Establish, maintain, and train a Philadelphia Police MIRT	PPD	Existing	No	Yes		Update unavailable	Removed - response focused and existing capability
Establish, maintain, and train a Philadelphia Police SWAT	PPD	Existing	No	Yes		Update unavailable	Removed - response focused and existing capability

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Improve and upgrade Baxter Water Treatment Plant security capabilities to prevent theft of chemicals, contamination of treated drinking water, and damage to critical infrastructure.	PWD	Potential	No	Yes		no updates to report	Removed/revised - combined into a new 2022 action
Establish, maintain, and train a Philadelphia Bomb Disposal Unit	PPD	Existing	No	Yes		Update unavailable	Removed - response focused and existing capability
Install standby generator at Belmont Raw Water Pumping Station to ensure operations during power outages.	PWD	Potential	No	Yes		no updates to report	Completed
Upgrade West Oak Lane to make the station more resilient in order to deliver water during extreme weather events.	PWD	Potential	No	Yes		no updates to report	Completed
Replace Baxter Raw Water Basin Intake to ensure reliable source during droughts and winter storms.	PWD	Potential	No	Yes		no updates to report	Completed

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Improve and upgrade water security system to prevent theft of chemicals, contamination of treated drinking water, and damage to critical infrastructure. Projects considered for 29th Street Complex Storage Units, Baxter and Belmont Water Treatment Plants, and Northeast and Southwest Water Pollution Control Plants.	PWD	Potential	No	Yes		no updates to report	Ongoing - revised to combine several separate actions from 2017 plan
Relocate Queen Lane Raw Water Intake to ensure reliable source during droughts and winter storms.	PWD	Potential	No	Yes		no updates to report	Removed - Project no longer planned
Relocate Belmont Raw Water Pump Station Intake to ensure reliable source during droughts and winter storms.	PWD	Potential	No	Yes		no updates to report	Completed
Rehabilitate Belmont Raw Water Pump Station and Intake to make the station more resilient in order to deliver water during extreme weather events.	PWD	Potential	No	Yes		no updates to report	Completed

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Rehabilitate Queen Lane Raw Water Pumping Station to make the station more resilient in order to deliver water during extreme weather events.	PWD	Potential	No	Yes		no updates to report	Ongoing - planning will be completed in next 5 years
Build additional finished water storage and rehab. Current finished water storage at East Park to ensure that water can be supplied during extreme weather events or other system-disrupting events.	PWD	Potential	No	Yes		no updates to report	Completed
Upgrade Lardner's Point Pumping Station to make the station more resilient in order to deliver water during extreme weather events.	PWD	Potential	No	Yes		no updates to report	Ongoing - in design
Construction of additional chemical dosing boosters and flushers throughout the city to maintain water quality.	PWD	Potential	No	Yes		no updates to report	Ongoing
Install back up generators at Lardner's Point Pumping Stations to ensure operations during power outages.	PWD	Potential	No	Yes		no updates to report	Completed

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Elevate electrical and HVAC equipment at Lardner's Point Pumping Station.	PWD	Potential	No	Yes		no updates to report	Removed - Project no longer applicable. The pump station will be rebuilt to make it more resilient to extreme weather.
Expand the study of Southern plant species by 30 acres using sustainable planting practices in preparation for increasing temperatures over the next century.	PPR	Potential	No	Yes		Update unavailable	Removed - duplicate
Addition of wastewater and stormwater pumps and storage in various locations throughout the system and facilities to send more water to the water pollution control plants during wet weather events.	PWD	Potential	No	Yes		no updates to report	Ongoing
Upgrade or replace the contaminant warning system to maintain optimal function.	PWD	Potential	No	Yes		Update unavailable	Removed/revised - combined into a new 2022 action
Purchase eight (8) additional chippers to assist in limb maintenance, reducing debris, and downed vegetation prior to and following storms to reduce damages to	Streets, PPR	Potential	No	Yes		Update unavailable	Removed - response focused

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
properties, road way closures, and debris.							
Upgrade of various wastewater and stormwater pump stations to handle increased flows from wet weather events.	PWD	Potential	No	Yes		no updates to report	Ongoing
Addition of effluent and outfall pumping station to a water pollution control plant to pump treated water to the river during extreme wet weather events and high tide.	PWD	Potential	No	Yes		no updates to report	Removed - duplicate
Addition of effluent and outfall pumping station to Northeast Water Pollution Control Plant Outfall and Effluent Pumping Station to pump treated water to the river during extreme wet weather events and high tide.	PWD	Potential	No	Yes		no updates to report	Ongoing - in design
Build additional water mains to provide better system redundancy and resiliency.	PWD	Potential	No	Yes		No updates to report	Ongoing

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Provide air quality alerts to the public.	PDPH	Potential	No	Yes		Update unavailable	Removed/revise - combined into a new 2022 action
Decrease the backlog of 2,000+ tree maintenance and removal projects to reduce unpruned and dead trees falling on power lines during storm events.	PPR	Potential	No	Yes		Update unavailable	Ongoing
Acquire properties that are prone to damage from flooding.	PWD/ Public Property	Potential	No	Yes		no updates to report	Ongoing
Procure additional breaching saws	PFD-SOC	Removed	No	Yes		Action Removed 2020. This mitigation action is no longer a priority. Resource need is met by partner agencies.	Removed - see 2020 Review
Conduct active shooter training for city staff	PPD, OEM	Potential	No	Yes		Update unavailable	Ongoing
Conduct fire station station-based IED hot zone training	PPD-BDU, PFD	Potential	No	Yes		Update unavailable	Removed - response focused
Increase bridge inspection training	STREETS	Potential	No	Yes		Ongoing	Ongoing
Renew/ review emergency crane contracts	STREETS, PROCUREMENT	Potential	No	Yes		Seek update from Fleet or Procurement.	Removed/revise - response focused and included in more general action
Operationalize IPAWS for city use	OEM, PEMA, FEMA	Potential	No	Yes		This was changed to "Existing" from "Potential." PCPC was removed from "Lead Agency" and replaced with "DPD"	Removed - response focused

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Train key staff and security on recognizing suspicious vehicles	PPD, OEM	Potential	No	Yes		Update unavailable	Removed - response focused
Evaluate various seismic building design enhancements using HAZUS-MH to identify enhancements that reduce losses generated by earthquakes.	OEM	Potential	Yes	Yes	2012 HMP stated the timeframe as 2 years. Due to lack of funding and expertise, the assessment was delayed.	Not complete due to lack of funding and expertise. Submitted PDM grant for 2022 HMP update and Hazus analysis.	Removed/revised - combined into a new 2022 Hazus action
Conduct a flood risk analysis - compile/map all areas at PHL at greatest risk of flooding during 100-yr and 500-yr flood events	PHL-DOA	Potential	No	Yes		Update unavailable	Removed - duplicate
Update the Airport Flood Emergency Response Plan (AFERP) with Operations, Engineering, and Planning	PHL-DOA	Potential	No	Yes		Update unavailable	Removed - duplicate
Procure urban blast modelling tool		Removed	Yes	Yes	Action Removed in 2017. No longer feasible.	N/A	Removed per earlier review and duplicate

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Develop individual hazard management plans for historic structures that take climate change impacts into account; if necessary, consider moving the structure to a safer location	PHMC, OEM, USACE	Existing	No	Yes		In April, 2018, USACE published the Philadelphia Historic Resource Flood Hazard Vulnerability Study, a document that assesses 25 historic structures and identifies potential nonstructural mitigation measures. The Flood Risk Management Task Force (FRMTF) and PA State Historic Preservation Office (SHPO) conducted a flood mitigation charette for the historic Valley Green Inn, located along the Wissahickon River in Fall 2019. Several potential contractors submitted proposals for flood mitigation techniques for this historic structure. Phase II of this project will involve following through with one of the proposed plans.	Ongoing
Assess properties that may benefit from elevation, acquisition, relocation, or retrofitting; and where feasible, implement recommended mitigation activities.	OEM, L&I, PCPC, PWD	Existing	No	Yes		This was changed to "Existing" from "Potential." It is still a PCPC priority	Ongoing

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Create a support trailer for emergency deployment with generator use.	OEM	Complete	No	Yes		Completed in 2018 (was potential)	Completed per earlier review
Create five mass care and sheltering trailers.	OEM	Complete	No	Yes		Completed in 2017 (was potential)	Completed per earlier review
Assessment for quick connect prioritization for city facilities.	OEM	Potential	No	Yes		OEM will maintain and update current list of city facilities requiring backup power on a frequent basis. OEM maintains GIS layer of facilities requiring redundant power sources.	Completed - see 2020 Review
Install a 2 MW peak shaving generator for demand response events. Can also be used as backup power in emergencies.	PHL-DOA	Potential	No	Yes		Update unavailable	Removed/revised - similar actions combined
Obtain vehicles and personnel to assist in the transportation of homeless and vulnerable populations prior to or following an incident	OSH	Potential	No	Yes		Update unavailable	Removed - response focused
Conduct logistics staging sites assessment for City agency use during an emergency.	OEM	Potential	No	Yes		Still a priority, but not started due to lack of staff time available.	Removed - response focused
Develop and implement a communication plan for public outreach for water conservation.	PWD	Potential	No	Yes		no updates to report	Removed/revised - combined into a new 2022 action

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Establish contracts with outside companies to assist with debris removal following a disaster.	Multiple Agencies	Potential	No	Yes		Update unavailable	Removed - response focused
Establish open end contracts with construction companies for emergency bridge and road repairs.	Streets	Potential	No	Yes		Project has not been started.	Ongoing
Establish open end contracts with construction companies for emergency building demolition.	L&I	Potential	No	Yes		Update unavailable. Suggest keeping	Removed - response focused
Establish open end contracts with construction companies for emergency vegetation management.	PPR	Potential	No	Yes		Update unavailable	Removed - response focused
Purchase and maintain hyper-local street-level weather stations to assist in salting, flooding, and plowing operations.	Streets	Potential	No	Yes		Project has not been started.	Ongoing
Purchase and maintain drop-gates for known dangerous roads during emergency events, particularly along Cobbs Creek, for Bells Mill Road, and on Delaware Ave	Streets	Potential	No	Yes		Project has not been started.	Ongoing
Clean and maintain streams and canals of debris prior to and	PWD	Potential	No	Yes		no updates to report	Removed - response focused and existing capability

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
following weather events.							
Purchase additional brining trucks for brining operations prior to winter storm events.	Streets	Potential	No	Yes		Existing brining trucks have been replaced.	Removed/revised - response focused and included in more general action
Purchase additional fuel truck for refueling vehicles during staging and response for emergency events, as well as for refueling generators and un-moveable equipment deployed during emergency events.	Streets	Complete	No	Yes		Project Complete.	Completed per earlier review
Develop a list of City owned property that can temporarily be used to store emergency debris & snow (by district).	Streets/OEM	Potential	No	Yes		Current list of locations is currently not maintained. Lack of available space for snow during winter events continues to be a problem.	Removed - response focused
Elevate, acquire, relocate, or retrofit properties that benefit from elevation, acquisition, relocation, or retrofitting.	OEM, L&I, DPD, PWD	Existing	No	Yes		This was changed to "Existing" from "Potential." PCPC was removed from "Lead Agency" and replaced with "DPD"	Ongoing

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Annually review the City's floodplain ordinance	PCPC, L&I	Potential	No	Yes		In 2019, a work group of the FRMTF reviewed the City's Zoning Code for the floodplain regulations. Updates and higher standards are drafted and are being contemplated for a 2020 code revision. Accordingly L&I is looking to update the Administrative Code in Fall 2020 to fill some permitting gaps in floodplain management.	Ongoing
Develop a software platform to share flooding event information across departments in real-time as well as historically.	Multiple Agencies	Existing	Yes	Yes	In Progress: The FRMTF began working with the USACE in December 2019 to develop a historic flood map.	Moved to existing actions in 2020. The FRMTF began working with the USACE in December 2019 to develop a historic flood map.	Ongoing
Complete outstanding follow-up items from the most recent Community Assistance Visit.	L&I, PCPC, PWD	Existing	Yes	Yes	L&I hired a Floodplain Manager in 2017 to complete follow up items on the most recent CAV visit.	Moved to existing actions in 2020. L&I hired a Floodplain Manager in 2017 to complete follow up items on the most recent CAV visit.	Ongoing
Formalize resource requesting plan for pre-event resource requests that may impact a widespread area to streamline resource distribution.	OEM	Existing	No	Yes		Moved to existing action in 2020. Ongoing. Resource request training and powerpoint is created. Process has not been formalized at this time. Improvements to the process are still needed.	Removed - response focused

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Partner with community leaders and stakeholders for the development of materials for READYCommunity to increase community preparedness and mitigation.	OEM	Existing	No	Yes		Moved to existing in 2020. OEM has graduated 13 READYCommunity groups since development of the program. OEM continues to work with new READYCommunity's each year.	Removed/revised - similar actions combined
Provide technical assistance to communities in the development of community emergency plans.	OEM	Existing	No	Yes		Moved to existing action in 2020. READYCommunity program helps communities as they develop emergency plans at the block level. OEM hopes to provide more hands-on, skills based training to communities in the future.	Removed - addressed in related READYCommunity action.
Maintaining relationships with universities and colleges within Philadelphia to support mitigation, emergency planning, training, and exercises between the City and higher educational facilities.	OEM	Existing	No	Yes		Moved to existing actions in 2020. OEM attends quarterly workgroups meetings with public safety divisions of local colleges and universities	Ongoing - revised to include mitigation
Update City of Philadelphia Building Codes.	PCPC, L&I	Existing	No	Yes		Moved to existing action in 2020. City adopted 2018 IBC codes, including Aoendix G and ASCE 24.	Removed - existing capability

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Develop educational and promotional video series to educate and increase public awareness of City hazards and response plans.	OEM	Existing	No	Yes		Moved to existing actions in 2020. OEM has created and published over 24 "Part of the Plan" videos and over 96 other informational videos on their website and Youtube channel.	Removed/revise - combined into a new 2022 action
Promote post disaster mitigation strategies throughout SEPA region, targeting communities that are most vulnerable. VOAD partner agencies may implement mitigation strategies.	OEM	Existing	Yes	Yes	Continuing through READYCommunity initiatives, SEPA regional work groups,	Moved to existing actions in 2020. OEM attends quarterly workgroups meetings with public safety divisions of local colleges and universities	Ongoing
Support resiliency of the City's private sector through information sharing, partnership building, training and education on preparedness, COOP, mitigation principles and Philadelphia's HMP.	OEM	Existing	Yes	Yes	OEM continues to hold stakeholder trainings and tabletop exercise.	Moved to existing actions in 2020. READYBusiness workshops provide small to medium-size business with business continuity trainings. 26 READYBusiness workshops have been offered in Philadelphia since 2017.	Removed/revise - combined into a new 2022 action
Update and expand READY programs for those with functional needs.	OEM	Existing	Yes	Yes	Expanding outreach materials and presentations to be more inclusive.	READY workshops were updated in 2017 to be screen-reader accessible. Presentations and materials were reviewed by OEM's AFN panel in 2017. An additional slide has been added to presentations that reviews preparedness	Removed/revise - combined into a new 2022 action

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
						considerations for the AFN population.	
Improve/enhance flood vulnerability data. Enhance planning by using surveys to more accurately define flood vulnerability.	PCPC	Existing	Yes	Yes		Moved to existing actions in 2020. In CAV process with FEMA where Flood Prone areas and properties were inspected.	Removed/revised - combined into a new 2022 action
Install GPS on all storm operations vehicles.	STREETS	Existing	Yes	Yes	Still a priority, but additional costs need to be considered as part of the project, including maintenance costs, staffing needed, and upgrades required to support the GPS equipment.	95% of Streets vehicles have GPS installed.	Completed
Pre-identify POD locations	OEM	Existing	No	Yes		Moved to existing actions in 2020. Philadelphia Department of Public Health (PDPH) conducts yearly closed and open POD trainings with OEM. PDPH's Medical Countermeasure Plan identifies POD locations for vaccine distribution.	Removed - response focused

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Conduct logistics operations functional exercises	OEM	Existing	No	Yes		Moved to existing action in 2020. Ongoing. Annual exercises are conducted with OEM staff. OEM hopes to logistics capability assessment tool or full scale exercise looking at state and federal resources is needed.	Removed - response focused
Deploy trauma kits to all SDP schools	OEM	Existing	No	Yes		Moved to existing actions in 2020. Trauma kits have been procured and deployment to schools is in progress. 126 kits have been issued. 115 out of 212 SDP facilities have at least 1 trauma kit. Future plans include buying more trauma kits to distribute to charter schools, crossing guards, and school buses. OEM is seeking potential funding sources for this project. OEM has also partnered with PPD, PFD-EMS and Temple University to conduct hands-on trauma kit training to over 700 staff and teachers.	Removed/revised - combined into a new 2022 action

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Conduct preparedness workshops within crude rail transport corridors	OEM	Existing	No	Yes		Moved to existing actions in 2020. Preparedness workshops are conducted in every police district in Philadelphia, including in areas within crude rail transport corridors.	Removed/revised - combined into a new 2022 action
Enhance THIRA process to identify gaps in mitigation capabilities, and to better align the THIRA with the HMP Planning Process.	OEM	Existing	No	Yes		Moved to existing actions in 2020. OEM hired a Regional Preparedness Program Manager in November 2019 to enhance and update the THIRA process across the region.	Ongoing - revised to closer match current activities
Upkeep the CSX Secure Now system	OEM	Removed	No	Yes		Action Removed 2020. CSX Secure Now system is no longer active.	Completed - see 2020 Review
Perform Cobbs Creek Stream Rehabilitation Reaches 1 to 3 to improve safety of structure or surrounding areas, eliminate or reduce erosion issues, help to regulate supply for drinking water intakes, reduce swimming hazards, and reduce flooding damage to surrounding areas.	PWD	Removed	No	Yes		Action removed 2020. Cobbs Creek Foundation is now taking the lead on this project.	Removed - see 2020 Review

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Perform structural repairs to dams and/ or removal of Mount Dam to improve safety of structure or surrounding areas, eliminate or reduce erosion issues, help to regulate supply for drinking water intakes, reduce swimming hazards, and reduce flooding damage to surrounding areas.	PWD	Removed	No	Yes		Action removed 2020. Mount Dam is not a dam that is in Philadelphia.	Removed/revised - see 2020 update - Mound Dam is at the Fairmount Fish Ladder so combined Fairmount Dam projects
Conduct community outreach for General Professional Preparedness.	PDPH	Removed	Yes	Yes	Competing priorities and lack of funding delayed implementation.	Action Removed 2020. Preparedness workshops READYHome, READYBusiness and READYCommunity cover general preparedness information.	Removed - see 2020 Review
Require new facilities located in flood zones to be raised above the base flood elevation by 18 inches	PCPC	Complete	Yes	Yes	Regulations were amended from 12" to 18" and now in zoning code.	Completed. Adopted in 2012.	Completed per earlier review
Investigate the possibility of consolidating floodplain management licensing and inspection responsibilities into one or two positions.	L&I and PCPC	Complete	No	Yes		Completed. L&I hired a Floodplain Manager in 2017.	Completed per earlier review
Formalize the process of resource tracking, receiving, and	OEM	Complete	No	Yes		Receiving and Distribution Center Plan was completed November	Completed per earlier review

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
distribution for large emergencies or events.						2019. Plan Maintenance is required every 3-5 years.	
Implement blast and thermal hardening for high ranked CIKR assets	PPD-BDU, OEM	Removed	No	Yes	Removed in 2017. No longer feasible	N/A	Removed per earlier review
Establish public outreach programs in L&I.	L&I	Complete	No	Yes		Philadelphia's Floodplain manager has conducted floodplain training sessions for over 1500 people. This training helps participants have a better understanding of the opportunities and challenges with floodplain development, the NFIP, and Philadelphia's current floodplain regulations.	Completed per earlier review
Purchase additional sweepers to assist in debris removal prior to and following flooding events.	Streets	Complete	No	Yes		Project Complete.	Completed per earlier review
Purchase additional flusher trucks for use during flooding events.	Streets	Complete	No	Yes		Project Complete.	Completed per earlier review
Establish emergency contracts for 500kW/1mW generators	OEM	Removed	No	Yes		Action Removed 2020. This mitigation action is no longer a priority. Resource need is met by partner agencies.	Completed - see 2020 Review

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Integrate plume modeling into OEM/ EOC/ RIC GIS systems	OEM	Removed	No	Yes		Action removed 2020. OEM has identified other resources including modeling done by Philadelphia Fire Department's Hazmat Unit and IMAAC for contingency planning and real time response.	Completed - see 2020 Review
Restore approximately 12,000 linear feet of stream channel and 25-40 acres of wetlands on the Cobbs Creek Golf Course to maximize flood storage potential and create a stable, natural floodplain	Cobbs Creek Foundation	Existing	No	Amendment		This is a 2020 HMP Amendment sent to FEMA	Ongoing
Conduct a risk and vulnerability assessment of businesses in or near the 100-year floodplain, including targeted outreach to businesses to determine preparedness, response, recovery and mitigation capabilities and gaps.	OEM	Existing	No	Amendment		This is an October 2021 HMP Amendment sent to FEMA	Ongoing
Continue to maintain and update the City's All-Hazard Mitigation Plan with a focus on plan integration and implementation	OEM	Existing	No	Amendment		This is an October 2021 HMP Amendment sent to FEMA	Ongoing

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Analyze the impact of natural and human-caused hazards and threats on critical infrastructure that supports supply chain systems through the update of the Freight (Truck) Network.	OTIS	Existing	No	Amendment		This is an October 2021 HMP Amendment sent to FEMA	Ongoing
Make stormwater sewer improvements to reduce the combined sewer overflows affecting approximately 109 properties in the area between 1651 and 1851 Christopher Columbus Blvd during extreme rain events.	PWD	Existing	No	Amendment		This is a 2020 HMP Amendment sent to FEMA	Ongoing
Advance comprehensive planning, technical analyses, and stakeholder engagement in Germantown for storm flood risk reduction and combined sewer overflow (CSO) mitigation within the Wingohocking and the Tookany/Tacony-Franford (TTF) Watersheds.	PWD	Existing	No	Amendment		This is an October 2021 HMP Amendment sent to FEMA, presumably to support a specific HMP grant application.	Ongoing

Mitigation Action and Description	Lead Agency/ Agencies	Completion Status	Included in 2012	Included in 2017	Update Since 2012	2020 Review	2021 Review
Complete facility-based, asset-level coastal risk assessments for PWD's drinking water and wastewater infrastructure. Risk Assessment will directly inform future flood mitigation and adaptation strategies needed to protect these critical facilities from sea level rise and storm surge impacts.	PWD	Removed	No	Amendment		This is an October 2021 HMP Amendment sent to FEMA, presumably to support a specific HMP grant application. Removed here since captured by two new 2022 PWD HMP actions (Drinking Water Infrastructure Planning, Wastewater Treatment Infrastructure Planning.)	Ongoing
Train bridge inspectors	STREETS-HIGHWAY, PENNDOT	Existing	No	Yes		Ongoing	Removed - duplicate