York County Hazard Mitigation Plan Update
Local Planning Team Meeting 2
December 11, 2017

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YORK COUNTY HAZARD MITIGATION PLAN UPDATE – LOCAL PLANNING TEAM MEETING 2

YORK COUNTY YCPC PLANNING COMMISSION

December 11, 2017

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Agenda

- Hazard Mitigation Surveys
- Hazard Profiles Discussion/Review
- Review Goals and Objectives
- Project/Action Identification
- Next Steps

Hazard Mitigation Plan Surveys

- Hazard Mitigation Capability Survey
- Hazard Identification and Prioritization Survey
- Public Hazard ID and Prioritization Survey
- Hazard Risk Factor Survey

Hazard Capability Survey

- 55 Responses/50 Municipalities
  - Regulatory Tools (Zoning/Subdivision, EOP, Stormwater, Building Code, and Comp. Plan)
  - Admin and Tech (EMA Manager, Staff, Engineer, Building Codes)
  - Funding- Community Development Block Grant
  - Public Education Programs
  - Limited in Planning/Regulatory, Admin/Tech, Financial, Ed/Outreach
  - No projects Last 10 years
  - Most not sure or depends for assistance in applying for grants

Hazard ID and Prioritization Survey

- 70 Responses/ 56 municipalities
- Severity- Nuclear Incident, Hurricane, Winter Storm
- Frequency- Winter Storm, Flooding, Hurricanes
- Increasing- Flooding, Winter Storm, Tornado, Hurricane
- Agree with adding Levee Failure and Mass Food & Animal Feed Contamination

Hazard ID and Prioritization Survey

- Agree with not adding 6 additional hazards
- Top Hazards 1) Winter Storm, 2) Flooding, 3) Hurricane
- 52% familiar with Plan
- Greatest Strength = Regional Information
- Needs- funding projects, include coyotes, feral dogs/cats under invasive species, sinkholes cover greater area
- Issue to consider Aging Population and Infrastructure
- Use Social Media and News Releases to advertise

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Public Survey

- 13 Responses/11 Municipalities
- Frequency- Winter Storm, Extreme Temps, Flooding
- Severity-Hurricane, (Flooding, Pandemic, Winter Storm)
- Increase in Extreme Temp., Hurricanes, Winter Storm
- Agree with Additions and Exclusions

Public Survey

- Top 3 Hazards- Winter Storm, Flooding, Extreme Temp.
- Familiar with Plan
- Strength- Consolidated Information
- Needs- Mass Food/Animal Food Contamination, Expand Invasive Species, Add Transportation Incidents and Utility Interruption
- Issues to consider- infrastructure and aging population
- Social Media most recommended for public involvement

Risk Factor Survey

Table 4.4.2-1: Hazard Prioritization Matrix

Hazard Risk	Hazard	Risk Assessment Category					Risk Factor
		Probability	Impact	Spatial Extent	Warning Time	Duration	
High	Nuclear Incidents	1.4	3.1	3.7	3.2	3.7	3.1
	Flood/Flash Flood/Ice Jam	3.7	2.4	2.8	1.7	2.4	3.0
	Winter Storms	3.4	2.2	3.6	1.2	2.7	2.9
	Environmental Hazards	3.1	1.8	2.5	3.5	2.1	2.9
	Radon Exposure	3.6	1.9	3.1	1.0	3.9	2.9
	Urban Fires/Explosions	2.9	2.1	1.8	4.0	1.8	2.8
	Pandemic And Infectious Disease	2.3	2.3	3.5	1.6	3.6	2.8
	Extreme Temperatures	3.2	1.8	3.6	1.1	3.1	2.8
	Terrorism	2.4	2.1	2.2	3.9	1.8	2.8
Moderate	Mass Food and Animal Feed Contamination	1.5	1.9	3.0	3.4	3.5	2.7
	Hurricane/Tropical Storm/Nor'Easter	2.5	2.3	3.6	1.1	2.3	2.6
	Tornado	2.7	2.1	2.2	2.8	1.4	2.6
	Dam Failure	1.2	2.7	2.6	3.3	2.1	2.6
	Hailstorm	3.1	1.4	2.2	3.2	1.0	2.5
	Wildfire	2.7	1.4	1.7	3.6	1.8	2.5
Low	Lightning Strike	3.3	1.6	1.4	2.9	1.0	2.4
	Drought	2.2	1.3	3.3	1.4	4.0	2.4
	Levee Failure	1.2	2.4	2.4	3.0	2.3	2.4
	Subsidence/Sinkhole	2.1	1.6	1.8	3.6	2.0	2.4
	Invasive Species	2.4	1.5	2.5	1.3	3.9	2.3
	Earthquake	1.8	1.1	2.2	3.7	1.0	2.2
	Civil Disturbance	1.4	1.7	1.7	3.2	1.9	2.1
	Landslide	1.1	1.0	1.3	3.6	1.1	1.7

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Hazard Profiles Chapter 4

- Expanded descriptions and events data
- Used York County Data instead of State for Exposure Data
- Review in upcoming month

Goals and Objectives Review

- Do Goals and Objectives adequately address conditions in York County?

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Goal 1

Reduce the possibility of injury or death to County residents and potential losses or damages to critical facilities, infrastructure, and property that could result from the occurrence of drought, earthquake, extreme temperature, flood/flash flood/ice jam, hailstorm, hurricane/tropical storm/nor'easter, invasive species, landslide, lightning strike, pandemic, radon exposure, subsidence/sinkhole, tornado/windstorm, wildfire, winter storm, civil disturbance, dam failure, environmental hazards, nuclear incidents, terrorism, and urban fires/explosions.

Goal 1 Objectives

- Objective 1A - Provide preventative or corrective measures where possible to deal with identified hazards.
- Objective 1B - Provide proper monitoring and warning of potential for a hazard to occur.
- Objective 1C - Provide for appropriate response to hazards that is coordinated at all levels.

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Goal 2

Encourage a coordinated effort among the County, its 72 municipalities, and those entities, both public and private, in dealing with hazard mitigation.

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Goal 2 Objectives

- Objective 2A - Ensure that an agency or organization is identified that can directly plan for and carry out tasks related to a specific hazard.
- Objective 2B - Utilize the Steering Committee (Local Planning Team) to coordinate and work towards addressing hazard mitigation throughout York County.
- Objective 2C - Encourage participation by municipalities in adopting and implementing the Plan, as well as in pursuing funding for implementation.

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Goal 3

Promote proper planning and disaster-resistant future development.

Goal 3 Objectives

- Objective 3A - Maintain the Hazard Mitigation Plan as an element of the *York County Comprehensive Plan*.
- Objective 3B - Where not already done, address hazard mitigation in codes, plans, and ordinances at both the municipal and County levels

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Goal 4

Increase public understanding, support and demand for hazard mitigation.

Goal 4 Objectives

- Objective 4A - Provide educational materials.
- Objective 4B - Create awareness among residents regarding their responsibility to be prepared for, and able to respond to, a hazard.

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Mitigation Actions

- Currently 102 actions identified.
- Staff will analyze and contact municipalities to see if still valid.
- Each municipality required to identify one hazard mitigation action.
- Actions identified for all eligible activities under FEMA programs.
- Need to solicit new projects.

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Next Steps

- Review Chapter 4 via link
- Project Identification
- Public Meeting – January
- Solicit Municipal Projects
- Update Capability Assessment Chapter 5
- Questions?

Appendix 10. Mitigation Strategy Ideas

Possible Mitigation Activities by Hazard Type
A Mitigation Planning Tool for Local Communities

This appendix has been adapted from "Mitigation Ideas, Possible Mitigation Measures by Hazard Type" created by PEMA and revised on March 6, 2009.

Flood

Ninety percent of federal disaster declarations are for flood events. Response and recovery costs can be extremely high, so where risks are apparent it makes sense to take actions that prevent damage from occurring. If flood damage cannot be fully prevented, there may be mitigation techniques that lessen the damage. Flooding addressed in this section can be from high ground water, overland flooding from rivers or streams, or from a dam failure.

Mitigation Measure	*Explanation*	*Category*
Acquisition	Land with structures may be purchased by and titled in the name of a local governing body that can remove structures and enforce permanent restrictions on development.	Structure and infrastructure
Relocation	A structure may be moved to a less hazardous location.	Structure and infrastructure
Elevation	A structure may be mechanically lifted so that the lowest floor, including the basement, is raised above the base flood elevation. Utilities or other mechanical devices should also be raised above expected flood levels.	Structure and infrastructure
Dry-Floodproofing	It may be possible to keep water out by strengthening walls, sealing openings, or using waterproof compounds or plastic sheeting on walls. Dry-floodproofing is not recommended for residential construction but may be a reasonable alternative for non-residential structures-either in new construction, while making a substantial improvement, or while repairing a substantially damaged structure.	Structure and infrastructure
Wet-Floodproofing	Using water resistant paints or other materials can allow for easy cleanup after floodwater exposure in accessory structures or in a garage area below an elevated residential structure. In a basement, wet-floodproofing may be preferable to attempting to keep water out completely, because it allows for controlled flooding to balance exterior and interior water forces and discourage structural collapse. Wet-floodproofing may not be used for basements in cases of new construction, substantial improvement, or substantial damage.	Structure and infrastructure
Floodplain/Coastal Zone Management	Determining and enforcing acceptable land uses through planning and regulation may not prevent inevitable flooding in flood-prone areas, but planning and regulation can alleviate the risk of damage by limiting exposure in	Local plans and regulations

Mitigation Measure	Explanation	Category
	such hazard areas. Floodplain and coastal zone management can be included in comprehensive planning.	
Capital Improvement Plans	Infrastructure planning decisions can affect flood hazard mitigation. For example, decisions to extend roads or utilities to an area may increase exposure. Some communities may consider structural flood protection such as levees or floodwalls.	Local plans and regulations
Zoning Ordinance Adoption or Amendments	Examples of zoning methods that affect flood hazard mitigation include: I) adopting ordinances that limit development in the floodplain; 2) limiting the density of developments in the floodplain; and 3) requiring that floodplains be kept as open space.	Local plans and regulations
Subdivision Ordinances or Amendments	Subdivision design standards can require elevation data collection during the platting process. Lots may be required to have buildable space above the base flood elevation.	Local plans and regulations
Building Code Adoption or Amendments	Requirements for building design standards and enforcement include the following possibilities: I) that a residential structure be elevated; and 2) that a nonresidential structure be elevated or floodproofed.	Local plans and regulations
Conservation Easements	Conservation easements may be used to protect environmentally significant portions of parcels from development. They do not restrict all use of the land. Rather, they direct development to areas of land that are not environmentally significant.	Natural systems protection
Transfer of Development Rights	In return for keeping floodplain areas in open space, a community may agree to allow a developer to increase densities on another parcel that is not at risk. This allows a developer to recoup potential losses from non-use of a floodplain site with gains from development of a non-floodplain site.	Local plans and regulations
Purchase of Easement/Development Rights	Compensating an owner for partial rights, such as easement or development rights, can prevent a property from being developed contrary to a community's plan to maintain open space. This may apply to undeveloped land generally or to farmland in particular.	Local plans and regulations
Stormwater Management Ordinances or Amendments	Stormwater ordinances may regulate development in upland areas in order to reduce stormwater run-off. Examples of erosion control techniques that may be employed within a watershed area include proper bank stabilization with sloping or grading techniques, planting vegetation on slopes, terracing hillsides, or installing riprap boulders or geotextile fabric.	Local plans and regulations
Multi-Jurisdiction Cooperation Within Watershed	Forming a regional watershed council helps bring together resources for comprehensive analysis, planning, decision-making, and cooperation.	Local plans and regulations / Natural systems protection
Comprehensive Watershed Tax	A tax can be used as a mitigation action in several ways: 1) tax funds may be used to finance maintenance of drainage systems or to construct reservoirs; 2) tax	Local plans and regulations

Mitigation Measure	Explanation	Category
	assessments may discourage builders from constructing in a given area; or 3) taxes may be used to support a regulatory system.	
Post-Disaster Recovery Ordinance	A post-disaster recovery ordinance regulates repair activity, generally depending on property location. It prepares a community to respond to a disaster event in an orderly fashion by requiring citizens to: I) obtain permits for repairs, 2) refrain from making repairs, or 3) make repairs using standard methods.	Local plans and regulations
Floodplain Ordinances or Amendments	Communities that choose to participate in the NFIP Amendments must adopt ordinances that meet minimum federal and state requirements. Communities may pass more stringent ordinances to reduce risk even further.	Local plans and regulations
Flood Insurance	Purchasing flood insurance does not prevent a flood from occurring, but it does mitigate a property owner's financial exposure to loss from flood damage. NFIP policies are only available in communities that participate in the program, which is administered by FEMA.	Local plans and regulations
Community Rating System	Also administered by FEMA, the Community Rating System (CRS) is a companion program to the NFIP. It rewards a community for taking actions over and above minimum NFIP requirements with the goal of further reducing flood damages in the community. The more actions a community takes, the lower the premiums for flood insurance within that community.	Local plans and regulations
Updated Floodplain Mapping	By taking the initiative locally to more accurately map problem areas with information not already on FEMA maps, a community can warn residents about potential risks that may not have been anticipated. Upgrading maps provides a truer measure of risks to a community.	Local plans and regulations / Education and awareness
Storm Drainage Systems	Flood mitigation can involve installing, re-routing, or increasing the capacity of a storm drainage system that may involve detention and retention ponds, drainage easements, or creeks and streams. It can 'include separation of storm' and sanitary sewerage systems as well as higher engineering standards for drain and sewer capacity.	Structure and infrastructure
Drainage System Maintenance	At most times, a drainage system will do its job and move water to intended areas. However, if a system is not maintained, erosion, material dumping, or deterioration of human-made reinforcement materials may reduce the carrying capacity of a stream. Therefore, regular maintenance, such as sediment and debris clearance, is needed so that the stream may carry out its design function. Also important is detection and prevention/discouragement of discharges into stormwater/ sewer systems from home footing drains, downspouts or sump pumps.	Structure and infrastructure
Drainage Easements	Communities may consider obtaining easements for planned and regulated public use of privately owned land for temporary water retention and drainage.	Local plans and regulations

Mitigation Measure	Explanation	Category
Wetland Protection	With special soils and hydrology, wetlands serve as natural collection basins for floodwaters. Acting like sponges, wetlands collect water, filter it, and release it slowly into rivers and streams. Protecting and preserving wetlands can go a long way toward preventing flooding in other areas.	Natural system protection
Roads	Roads are needed to get people and goods from place to place. In addition to planning for traffic control during floods, there are various construction and placement factors to consider when building roads. To maintain dry access, roads should be elevated above the base flood elevation. However, if a road creates a barrier it can cause water to pond. Where ponding is problematic, drainage and flow may be addressed by making changes to culvert size and placement. In situations where flood waters tend to wash roads out, construction, reconstruction, or repair can include not only attention to drainage but also stabilization or armoring of vulnerable shoulders or embankments.	Local plans and regulations / Structure and infrastructure
Structural Flood Control Measures	Structural flood control measures (e.g., levees, dams, or floodwalls) channel water away from people and property. Structural measures may also increase drainage or absorption capacities (e.g., detention and retention basins, relief drains, spillways, drain widening/dredging or rerouting, logjam and debris removal, extra culverts, bridge modification, dike setbacks, flood gates and pumps, or channel redirection). However, structural measures may cause an increase in the base flood elevation. History has shown that structures that channel water may create a false sense of security and result in greater damage to nearby properties if the structures fail.	Structure and infrastructure
Minor Structural Projects	A minor structural project is similar to, but smaller and more localized than a structural project, in that the measures used to reduce flooding may include levees, floodwalls, dams or other activities that channel water away from people or property. However, a minor structural project should only be constructed in areas that cannot be mitigated through nonstructural activities, or where structural activities are not feasible due to low densities.	Structure and infrastructure
Dam and Levee Maintenance	Although dams and levees may have been constructed properly, failure to maintain them can lead to significant loss of life and property if they are stressed and broken or breached during a flood event. An inspection, maintenance and enforcement program helps to ensure continued structural integrity. Dams or levees need to be kept in good repair. Unnecessary or old and structurally unsound dams should be removed. Planning for dam breaks can include constructing emergency access roads as well as automating pump and flood gate operation. It also never hurts to regulate development in a dam's hydraulic shadow, where flooding would occur if there were a severe dam failure.	Structure and infrastructure

Mitigation Measure	Explanation	Category
Community Outreach and Education	Communities may use outreach programs to: I) advise homeowners of risks to life, health and safety; 2) facilitate technical assistance programs that address measures that citizens can take; or 3) facilitate funding for mitigation measures. Driver safety strategies for flooded areas can be addressed through driver safety/education classes and by the media. Local officials can be trained on flood fighting, floodplain management, flood proofing, and traffic control during flooding, and other measures.	Education and awareness
Debris Control	Community members can participate in debris control by securing debris, yard items, or stored objects that may otherwise be swept away, damaged, or pose a hazard if floodwaters would pick them up and carry them away. Additionally, a community can pass and enforce an ordinance that regulates dumping.	Local plans and regulations / Structure and infrastructure
Hazardous and Buoyant Material Protection	Containers of hazardous materials such as petroleum or chemicals should not be located in a flood hazard area. If such a location is necessary, hazardous material containers need to be anchored, because the contents can contaminate water and multiply the damaging effects of flooding by causing fires or explosions, or by otherwise making structures unusable. Also, buoyant materials should be anchored, because if they float downstream, they may cause additional damage to buildings or bridges or may plug a stream resulting in higher flood heights.	Local plans and regulations / Structure and infrastructure
Flood Warning	In addition to a communication strategy, a flood warning system may consist of people or machines monitoring water level with stream gauges. Although a flood warning system generally does not provide long-term damage reduction, it can alleviate health and safety risk by providing citizens time to escape and possibly remove belongings that could be damaged. NOAA weather radio and EAS broadcasts can be incorporated into a community's flood warning system.	Local plans and regulations / Structure and infrastructure
Manufactured Homes	Manufactured or mobile homes should be elevated above the base flood elevation and anchored, or more preferably, kept out of the floodplain.	Local plans and regulations / Structure and infrastructure

Landslide and Debris Flow

Landslides or debris flow can be caused by the same high water levels or rain that results in flooding. Landslides can also be caused by earthquakes and are typically present in areas of high topographic relief. Although many mitigation measures resemble those for flooding, landslides pose unique considerations.

Mitigation Measure	Explanation	Category
Mapping	Local governments, developers, and residents can make better decisions using maps. Soil types, slope percentage, drainage, or other critical factors are used to identify landslide prone areas.	Education and awareness
Building Codes	Building codes can set construction standards, including minimum foundation requirements, in landslide-prone areas.	Local plans and regulations
Zoning Ordinances	Zoning ordinances may be used to create buffers between structures and high-risk areas.	Local plans and regulations
Slide-Prone Area Ordinance	A special purpose ordinance for slide-prone areas may be used to limit fill or dumping, as well as address drainage and other landslide related problems.	Local plans and regulations
Code Enforcement	A strong community commitment to code enforcement is necessary to ensure compliance with building codes and zoning ordinances.	Local plans and regulations
Drainage Control Regulations	Drainage regulations are similar to storm water management regulations. By controlling drainage, a community can reduce the risk of landslides resulting from saturated soils.	Local plans and regulations
Grading Ordinances	Grading ordinances require developers and landowners to obtain permits prior to filling or regrading. Such ordinances may also provide specific design standards.	Local plans and regulations
Hillside Development Ordinances	Hillside development ordinances are special purpose ordinances that set specific standards for construction on hillsides.	Local plans and regulations
Subdivision Ordinances	Subdivision ordinances set guidelines on how land will be divided, the placement and size of roads, and the location of infrastructure. Such ordinances can also be used to regulate open space and buildable areas.	Local plans and regulations
Geological Hazard Overlay Zone	A geological hazard overlay zone requires a detailed geo-technical analysis prior to any construction activity. Used in association with building codes, this may reduce damage potential by providing clear information about risk.	Local plans and regulations
Sanitary System Codes	Sanitary system codes can reduce the effect of drainage on landslides by limiting the type and location of sanitary systems.	Local plans and regulations
Open Space Designation	Open space designations keep landslide prone areas undeveloped.	Local plans and regulations
Relocation	Structures may be moved to less hazardous locations.	Property Protection

Mitigation Measure	Explanation	Category
Acquisition	Land and structures may be purchased by and titled in the name of a local governing body that can remove structures and enforce permanent restrictions on development.	Structure and infrastructure
Restraining Structures	Restraining structures may be designed and used to hold soil in place.	Structure and infrastructure
Debris-Flow Measures	Debris-flow measures may include stabilization, energy dissipation, and flow control measures, all of which may reduce damage in-sloping areas.	Structure and infrastructure
Grading	Grading can be used to increase slope stability, depending on types of soils, height of fill or cut, and compaction.	Structure and infrastructure
Vegetation Placement and Management Plans	Various types of vegetation increase soil stability through root length and strength and by absorbing precipitation. Management plans are aimed at ensuring long-term maintenance of vegetation appropriate for an area.	Local plans and regulations
Utility Location	Placing utilities outside of landslide areas decreases the risk of service disruption.	Structure and infrastructure
Abatement Districts	A special taxing district, such as an abatement district, can be used to pool resources to mitigate common hazards.	Local plans and regulations
Restrictive Covenants	A legally binding agreement in a private development can be used to impose restrictions on land use.	Local plans and regulations

Thunderstorm/Lightning

Damage from thunderstorms and lightning is often underestimated. Everyone should have an appreciation for the dangers of lightning. Although not entirely preventable, damage and life safety risk from these events can be minimized.

Mitigation Measure	Explanation	Category
Community Outreach and Education	Communities may use outreach programs to promote awareness of thunderstorm dangers. Driver safety strategies for severe weather events can be addressed by driver safety/education classes and by the media.	Education and awareness
Early Warning Systems	Local and state governments can invest in public early warning systems/networks, as well as train people to serve as weather spotters.	Local plans and regulations / Structure and infrastructure
Surge Protectors and Lightning Protection	Surge protection can be installed on critical electronic lightning Protection equipment. Lightning protection devices and methods such as lightning rods and grounding, can be installed on a community's communications infrastructure and other critical facilities.	Structure and infrastructure
Building Construction	Public and private buildings can be designed with structural bracing, shutters, laminated glass in window panes, and hail-resistant roof shingles or flashing to minimize damage.	Structure and infrastructure

Mitigation Measure	Explanation	Category
Burying Power Lines	Buried power lines offer the security of uninterrupted power during and after storms. However, consideration needs to be made for maintenance and repair, particularly in cold climates where soil freezes more readily.	Structure and infrastructure

Tornado

Tornadoes can strike anywhere and cause extensive damage. Damage and life safety risk may not be entirely preventable, but it can be minimized.

Mitigation Measure	Explanation	Category
Construction Standards and Techniques	To strengthen public and private structures against severe wind damage, communities can require or encourage wind engineering measures and construction techniques that may include structural bracing, straps and clips, anchor bolts, laminated or impact-resistant glass, reinforced pedestrian and garage doors, window shutters, waterproof adhesive sealing strips, or interlocking roof shingles. Also, architectural design can make roofs less susceptible to uplift.	Local plans and regulations
Safe Rooms	Risk to lives can be improved through construction and use of concrete safe rooms in homes and shelter areas of mobile home parks, fairgrounds, shopping malls, or other vulnerable public areas.	Structure and infrastructure
Anchoring Manufactured Homes	Damage and injury can be prevented by anchoring manufactured homes and exterior attachments such as carports and porches.	Structure and infrastructure

Severe Wind

Severe wind can be as destructive as tornadoes. Damage and life safety risk may not be entirely preventable, but it can be minimized.

Mitigation Measure	Explanation	Category
Roofing Shingles	Requiring the use of special roofing shingles designed to interlock and resist uplift forces in extreme wind conditions can reduce damage to a roof or to other structures.	Structure and infrastructure
Building Construction Standards	Engineered construction can accommodate foundation design, braced elevated platforms, and the ability of a structure to withstand the lateral forces of winds and waves.	Local plans and regulations
Manufactured Home Tie-Downs	The risk of manufactured home damage can be reduced by using tie-downs with anchors and ground anchors appropriate for the soil type.	Structure and infrastructure
Designed-Failure Mode	Designed-failure mode refers to power line design that allows for lines to fall or fail in small sections rather than as a complete system, so restoration can be done more quickly.	Local plans and regulations / Structure and infrastructure

Extreme Temperature

When temperatures reach levels that are extremely high or extremely low, they pose dangers that can be alleviated by planning for how to handle such situations.

Mitigation Measure	Explanation	Category
Outreach/Public Awareness	A local government can organize outreach to vulnerable populations during periods of extreme temperature, including establishing and promoting accessible heating or cooling centers in the community.	Education and awareness
Heating Requirements	Housing/landlord codes can require minimum temperatures.	Local plans and regulations

Winter Weather/Snowstorms

Proper preparation can decrease the risks of injury that can occur during cold weather, and snowstorms in particular.

Mitigation Measure	Explanation	Category
Burying Power Lines	Burying or otherwise protecting electric and other utility lines can prevent utility disruption by protecting lines from ice, wind or snow damage. Nevertheless, lines buried in frozen soil may be difficult to reach if repair is necessary.	Local plans and regulations / Structure and infrastructure
Code Enforcement and Building Maintenance	Local governments can impact building/site design through building code enforcement of snow-related ordinances such as snow loads, roof slope, snow removal, and storage. Communities can also monitor snow amounts to provide site specific snow load data.	Local plans and regulations

Earthquake

Some regions are particularly susceptible to earthquake damage. Risks of injury and damage from earthquake events can be determined and managed.

Mitigation Measure	Explanation	Category
Seismic Hazard Mapping	Information gained from seismic hazard mapping can be used to assess risk. The first step is collection of geologic information on seismic sources, soil conditions, and related potential hazards. The second step is to prepare a map showing the approximate locations of various hazards.	Education and awareness
Related Hazard Mapping	Other earthquake-related hazards include liquefaction and landslides. Maps of these related hazards may be used for vulnerability analysis and risk assessment.	Education and awareness
HAZUS	FEMA's HAZUS is a computer-based tool that can be used to quantitatively estimate losses from an earthquake.	Education and awareness
Loss Estimation Studies	After seismic hazards have been identified, planners can create an earthquake scenario to estimate potential loss of life and injuries, the types of potential damage, and existing vulnerabilities within a community. Scenarios can be particularly	Education and awareness

Mitigation Measure	Explanation	Category
	useful in predicting lifeline performance, i.e., the sustainability of critical public services or systems such as electricity, water, or roadways. This knowledge can be used to develop earthquake mitigation priorities.	
Capital Improvement Planning	School districts, local governments, corporations, and others have developed capital improvement plans to ensure that facilities remain operational for years down the road. It is more efficient and cost effective to incorporate structural and non-structural seismic strengthening actions into on-going building plans and activities, rather than to rehab later.	Local plans and regulations
Guidelines and Model Ordinances	Earthquake hazards can be mitigated through land use planning. Communities can develop and distribute guidelines or pass ordinances that require developers/building owners to locate lifelines, buildings, critical facilities, and hazardous materials out of areas subject to significant seismic hazards. Particular consideration should be given to enforcing such ordinances in areas with steep slopes or subject to ground displacement, severe ground shaking, or liquefaction.	Local plans and regulations
Building Codes	Although land use management that avoids building on hazardous sites is an effective way to reduce earthquake risk, there may be times when it is necessary to build on such sites. Engineers and architects have designed buildings in ways that reduce the impact of ground shaking. Encouraging all local governments to adopt and enforce updated building code provisions is one effective way to reduce earthquake damage risk.	Local plans and regulations
Retrofitting – Securing Building Components and Contents	Many injuries in earthquakes are caused by nonstructural hazards, such as attachments to buildings. These include lighting fixtures, windows (glass), pictures, tall bookcases, computers, ornamental decorations on the outside of the buildings (like parapets), gas lines, etc. Activities that can reduce the risk of injury and damage include: anchoring tall bookcases and file cabinets, installing latches on drawers and cabinet doors, restraining desktop computers and appliances, using flexible connections on gas and water lines, mounting framed pictures and mirrors securely, and anchoring and bracing propane tanks and gas cylinders.	Structure and infrastructure
Infrastructure Hardening	Identification and hardening of critical lifeline systems, i.e., critical public services such as utilities and roads, to meet "Seismic Design Guidelines and Standards for Lifelines," or equivalent standards, may distinguish a manageable earthquake from a social and economic catastrophe.	Structure and infrastructure
Bridge Strengthening	State and local highway departments should review construction plans for all bridges to determine their susceptibility to collapse. Problem bridges should be retrofitted.	Structure and infrastructure

Drought

Periods of time with little or no precipitation can pose risks that can be managed with conservation and preparation.

Mitigation Measure	Explanation	Category
Water Use Ordinances	Communities can pass ordinances to prioritize or control water use, particularly for emergency situations like fire fighting.	Local plans and regulations
Contingency Plans	Drought contingency plans can help anticipate needs and actions to take during a drought.	Local plans and regulations

Wildfire

Wildfires typically start in woodland or prairie areas. They can occur naturally though they are often exacerbated by human activities. Wildfires can be hard to control as they threaten homes and communities located nearby. Although preventing or controlling wildfires is preferable, there are many mitigation efforts we can take to prevent or alleviate damage to our homes and communities when fires inevitably occur.

Mitigation Measure	Explanation	Category
Public Education	Outreach efforts can promote such items as noncombustible roof covering, fire safe construction, and the importance of clearing brush and grass away from buildings. It is important to promote public education on smoking hazards and the risks of recreational fires.	Education and awareness
Zoning Regulations	Zoning can be used to cluster development into defensible areas and keep development away from fire hazards such as steep slopes, where fires are difficult to contain.	Local plans and regulations
Defensible Space	Damage potential can be reduced by ensuring that structures are surrounded by defensible space or buffer zones. Buffer zones are manageable areas, generally 30 to 100 feet and cleared of combustible materials.	Local plans and regulations / Structure and infrastructure
GIS Mapping	GIS mapping of vegetative coverage can facilitate analysis and planning decisions through comparison with topography, zoning, developments, infrastructure, or other markers.	Education and awareness
Building Codes	Building codes can be used to require upgrades to existing as well as new structures.	Local plans and regulations
Burning Restriction	Local ordinances can require burn permits and restrict campfires and outdoor burning.	Local plans and regulations
Hillside Construction	It is important to note that hillsides facing south or west are more vulnerable to increased dryness and heat from sun exposure. Structures should be set back from slopes outside of the "convection cone" of intense heat that is projected up the slope of a hill as a wildfire "climbs" it.	Structure and infrastructure

Mitigation Measure	Explanation	Category
Building Foundations	In wildfire prone areas, risk may be decreased by enclosing the foundations of homes and other buildings, rather than leaving them open where undersides can be exposed to blown embers or other materials.	Structure and infrastructure
Smoke/Fire Detectors and Sprinklers	Citizens can install and maintain smoke detectors and fire extinguishers on each floor of their homes or other buildings. This equipment should be tested and/or inspected regularly, and smoke detector batteries should be changed twice a year. Everyone in a household or building can be taught how to use a fire extinguisher. Other valuable fire mitigation systems include interior and exterior sprinkler systems.	Local plans and regulations

Hazardous Materials

Various government agencies regulate the use, storage, release, and disposal of hazardous substances, because exposure to these substances can result in imminent injury, illness, or damage to property. Mitigation begins with regulatory compliance.

Mitigation Measure	Explanation	Category
Safety Procedures and Policies	Regulations require training in and compliance with all and Policies safety procedures and systems related to the manufacture, storage, transport, use, and disposal of hazardous materials.	Local plans and regulations / Education and awareness
Public Awareness and Worker Education	The Emergency Planning and Community Right-to-Know Act (EPCRA), also known as SARA Title Ill, provides an infrastructure at the state and local levels to plan for chemical emergencies. Facilities that store, use, or release certain chemicals may be subject to reporting requirements. Reported information is publicly available so that interested parties may become informed about potentially dangerous chemicals in their community. Employers must also communicate the hazards of workplace chemicals and ensure that workers receive education and training.	Education and awareness
Emergency Plans	The community's emergency plan must include the following: identification of local facilities and-transportation routes where hazardous materials are present; procedures for immediate response in case of an accident, including a community-wide evacuation plan; a plan for notifying the public that an incident has occurred; names of response coordinators at local facilities; and a plan for conducting simulation exercises that test the plan.	Local plans and regulations
Risk Management Plans	U.S. Environmental Protection Agency (EPA) regulations require development of Risk Management Plans for sites that manufacture, store, or handle hazardous materials. The details of Chemical Accident Prevention and Risk Management Programs are managed by EPA's Chemical Emergency Preparedness and Prevention Office (CEPPO).	Local plans and regulations
Local Emergency	To address the possibility of hazardous material incidents, communities are required under Federal law (SARA Title III) to	Local plans and regulations /

Mitigation Measure	Explanation	Category
Planning Committee Education	maintain an active and viable Local Emergency Planning Committee (LEPC) to develop an emergency plan for preparing for and-responding to chemical emergencies, such as spills, leaks, explosions, or other releases. The LEPC is required to review, test, and update the plan each year.	Education and awareness
Industrial Site Buffering	Hazardous material exposure can be prevented or reduced by separation and buffering between industrial areas and other land uses. Industrial areas should be located away from schools, nursing homes, hospitals, and other facilities with large or vulnerable populations.	Local plans and regulations / Structure and infrastructure

Terrorism

Sabotage, terrorism, and the potential for exposure to weapons of mass destruction (WMD) have become part of our social conscious and should be considered in mitigation planning.

Mitigation Measure	Explanation	Category
Threat Assessment	Local governments can start with development of a thorough community risk and threat assessment that identifies potential vulnerabilities and targets for a sabotage/terrorism/WMD attack.	Local plans and regulations
Critical Infrastructure Protection	Critical Infrastructure Protection (CIP) is extremely important. The federal government has begun a systematic effort to define, prioritize, and develop effective strategies for protecting the Nation's critical infrastructure. Local governments are an integral part of the effort with regard to critical local services, such as water, electricity, telephones, roads and bridges. CIP should be a prominent part of community risk and threat assessment.	Local plans and regulations
Hazard Resistant Building Materials	Public buildings and critical facilities can be constructed or retrofitted using laminated glass, metal shutters, structural bracing, and other hazard-resistant, durable construction techniques.	Structure and infrastructure
COOP Planning	Communities can encourage private sector development and testing of internal emergency plans and procedures including Continuity of Operations (COOP) planning.	Local plans and regulations

Pandemic

If left unchecked, various diseases or environmental conditions can result in widespread illness and threats to life.

Mitigation Measure	Explanation	Category
Immunization	Immunization against communicable diseases can be encouraged among residents of a community.	Education and awareness

Mitigation Measure	Explanation	Category
Ventilation Retrofits	The spread of communicable diseases can be thwarted by compartmentalizing ventilation systems in areas/facilities prone to crowding, or areas that may involve exposure to contagions or noxious atmospheres.	Structure and infrastructure
Water and Sewer Maintenance	Communities need to maintain water and sewer infrastructure at acceptable operating standards. Back-up generators for water and wastewater treatment facilities can help maintain acceptable operating levels during power failures. Separation of storm and sanitary sewer systems can also prevent release of untreated sanitary waste when stormwater might otherwise overfill a sewer system.	Structure and infrastructure
Public Health Systems and Public Awareness	Communities can maintain public health systems with sufficient disease monitoring and surveillance capabilities to protect the population from large-scale outbreaks; they can also support free or reduced-cost clinics and school health services. Public awareness campaigns can emphasize the causes, symptoms, and protective actions for disease outbreaks or other potential public health emergencies.	Education and awareness

Nuclear Incidents

People receive radiation exposure each day from the sun, radioactive elements in soil and rocks, household appliances like television sets and microwave ovens, and medical and dental x-rays. These exposures may prompt controversy, but they do not pose the risk of imminent danger from radiation release that might occur if a nuclear power plant had a meltdown. Serious radiological accidents can occur anywhere radioactive materials are used, stored, or transported. A nuclear power plant, hospital, university, research laboratory, industrial plant, major highway, railroad line, or shipping yard could be the site of a radiological emergency.

Mitigation Measure	Explanation	Category
Users of Radiological Materials	Users, transporters, and disposers of radiological materials are required to follow strict procedures that prevent or minimize radiation release.	Local plans and regulations
Emergency Planning for Transportation Routes	Communities located along major transportation routes should develop and practice an emergency plan for handling transportation accidents involving radiological materials.	Local plans and regulations
Radiological Emergency Preparedness for Nuclear Plants	Radiological Emergency Preparedness (REP) for communities surrounding nuclear power plants requires proper awareness of, training on, and implementation of radiological emergency procedures. Specific planning requirements for communities within primary and secondary Emergency Planning Zones are found in the Code of Federal Regulations (44 CFR § 350, 351, 352) and in a Nuclear Regulatory Commission guidance document (NUREG-0654).	Local plans and regulations
Shelters and Warning Systems	Communities can promote awareness of designated shelters and accident warning systems. They also may develop and promote workable population protection plans, i.e., evacuation and in-place sheltering plans.	Education and awareness

Mitigation Measure	Explanation	Category
Safe Rooms	Concrete safe rooms or shelters can be constructed in houses, trailer parks, community facilities, and business districts.	Structure and infrastructure / Education and Awareness
Hazard Resistant Building Materials	Public buildings and critical facilities can be constructed using laminated glass, metal shutters, structural bracing, and other hazard-resistant, durable construction techniques.	Structure and infrastructure

York County Hazard Mitigation Plan – Update

Local Planning Team Meeting #2

Attending: Ernie Szabo, PEMA

Staff: Amy Evans, Wade Gobrecht, Roy Livergood, Jeph Rebert, Joe Simora, and Anne Walko

Welcome and Introductions

Roy Livergood welcomed everyone to the meeting. Self-introductions were made. Roy shared the agenda for the meeting.

Hazard Mitigation Surveys

Roy Livergood shared that four surveys have been conducted to date: Hazard Mitigation Capability Survey; Hazard Identification and Prioritization Survey; Public Hazard ID and Prioritization Survey; and Hazard Risk Factor Survey. Each are outlined below.

Hazard Capability Survey

Roy received 55 responses/50 municipalities. It included questions on regulatory tools, administration and technical (specifically staff knowledge of hazard mitigation), funding, public education, and the limitations of each. General observations include that most had not done any projects in the past 10 years and many are unsure if they will be applying for funding in the future. Roy shared that there is an interest in the Plan update to take a greater part in working with residents and that this is dependent of the project type. Roy did clarify that some municipalities have completed projects, including Fairview, Paradise, Hellam, and Dover Townships.

Hazard Identification and Prioritization Survey

Roy received 70 responses/56 municipalities. The purpose of the survey was to review and prioritize the hazards by severity and frequency. The top three ranked highest in severity are nuclear accident, hurricane, and winter storm. Related to frequency, the top three are winter storm, flooding, and hurricanes. Hazards with rankings that are increasing are flooding, winter storm, tornado, and hurricane. The respondents agreed to profile levee failure and mass food and animal feed contamination. The respondents were in agreement not to add six additional hazards. Some general information: 52% considered themselves familiar with the Plan and felt its strength was regional information. Additional needs brought to attention include funding projects related to coyotes, including feral dogs/cats in invasive species, increasing coverage area of sinkholes. Respondents said to consider the aging population and infrastructure. Survey results show that the use of social medial and news releases are the preferred methods to advertise and share about the plan update.

Public Survey

Roy received 13 responses/11 municipalities. The survey was posted on Facebook, www.ycpc.org, and notification was sent through YCPC E-Alert. This, too, ranked hazards based on severity and frequency. The hazard ranked most severe is hurricane. Flooding, pandemic, and winter storm followed, all tied for second. Ranked highest in frequency are winter storms, extreme temperatures, and flooding. Extreme

temperatures, hurricanes, and winter storms increased in the rankings. Most reported familiarity with the plan and see its strength as a consolidation of information. Needs identified were the addition of mass food and animal feed contamination, expansion of invasive species, addition of transportation incidents and utility interruption. The plan has to consider infrastructure and the aging population. Social media recommended for public involvement.

Risk Factor Survey

Roy Livergood shared a chart that presented the outcome of the risk factor survey. He shared that nine hazards ranked "high" and previously five had. The top four, nuclear incidents, flash flood/flooding/ice jam, winter storms, and environmental hazards remained the same. He also clarified that mass food and animal feed contamination is a new category and it ranked "moderate." Ernie Szabo stated that it is important to realize that these rankings are important and are in the context of York County.

Hazard Profiles (Chapter 4)

Roy Livergood shared that the draft of this chapter includes expanded descriptions and events data for all hazards. For exposure dada, York County data was used. 23 hazards are now profiled. HAZUS has been fine tuned, along with assessment data, to provide reliable local estimates. Roy will send out a link to this chapter, with changes highlighted. Comments are due back by 1/26/18. Wade Gobrecht suggested putting the hazard profiles chapter on Civi-comment. Roy agreed and asked Wade to look into it. A meeting to inform the public will be held in mid-January.

Goals and Objectives

The next portion of the meeting focused on a review and discussion of the goals and objectives.

Goal 1-

It was suggested it be updated to reflect the current list of hazards. Discussion around the objectives for Goal 1 included questions about the status of South Central Alert. Joe Simora shared that the Next Gen 911 is a migration to GIS data for call routing. This is more on the response side of things. Also, providing preventative measures includes helping to identify projects.

Goal 2-

Roy clarified that the hazard mitigation planning initiatives have expanded to include police and colleges. Representative Hill suggested involvement by school districts. Outreach to school district personnel did not yield any participation/representation.

Ernie Szabo did share that school districts are notified of the larger scale drills that are conducted by nuclear facilities. Jeph Rebert suggested an analysis conducted by Homeland Security and Pennsylvania State Police, that identifies lucrative, vital targets in a community or area. Ernie Szabo confirmed the benefit of such an analysis. Regarding the objectives for Goal 2, Ernie explained that the State also has a State Recovery Plan… *how to recover after a hazard or disaster occurs*.

The floodplain viewer was mentioned as a valuable tool in this. Roy elaborated that he's consideredthe development of an all county/all hazard viewer. He further stated that the County will be taking a greater role to help residents pursue funding. He summarized that the YCPC role is planning and that EMA is response.

Joe Simora offered to see what he can find out related GIS users and hazard mitigation. Evacuation routes were mentioned.

Goal 3-

This goal promotes proper planning and disaster-resistant future development. Discussion regarding the objectives included floodplain ordinances along with other model ordinances prepared by FEMA. Ernie also shared that there are many best practices for reference. These objectives can be expanded to include municipal planners' reviews of projects and plans. Conversation about radon detection ensued.

Goal 4-

Regarding increasing public understanding, Jeph Rebert inquired about auto-less households like the Amish. Roy and Ernie confirmed that the Plan includes community contacts for such purposes. School districts were mentioned again and it was confirmed that they are made aware of drills at nuclear plants.

Mitigation Actions

The current plan identifies 102 actions. Staff will review list and contact municipalities to see if the mitigation actions are still valid. As for previous plans, each municipality is required to identify one hazard mitigation item. For those without specific hazard-related project needs, they will fall under the general recommendations. There is a need to solicit new projects, too.

Ernie Szabo elaborated that the most popular projects are culverts. It is good to identify vulnerable water/road transitions. Additionally, it is useful to determine how many miles of powerline is in the County and identify where there might be issues with overhead lines and trees. Additionally, a recommendation could be to bury the power lines.

Discussion then moved to York City. It was suggested that the City will be completing their own hazard mitigation plan. Discussion ensured and Ernie Szabo shared his thought that setting priorities is more effectively done at the County level. It is allowable for a municipality to complete its own plan however it is advisable to work with the County.

Roy Livergood confirmed for Ernie Szabo that the Plan is available online and it is searchable. As a word of advice, Ernie recommended that no portion of the Plan should exceed 10 MG, for ease of downloading.

Next Steps

Roy Livergood outlined the steps moving forward. First, the link Chapter 4 will be distributed. Time will be spent to identify projects. There will be a public meeting in January to review profiles. Municipal projects will be solicited. Roy will work to update Chapter 5, Capability Assessment. Roy also shared that outreach includes presentations to the Transportation Coalition, the Local Emergency Planning Committee (LEPC), and the Heritage Preservation Advisory Committee.