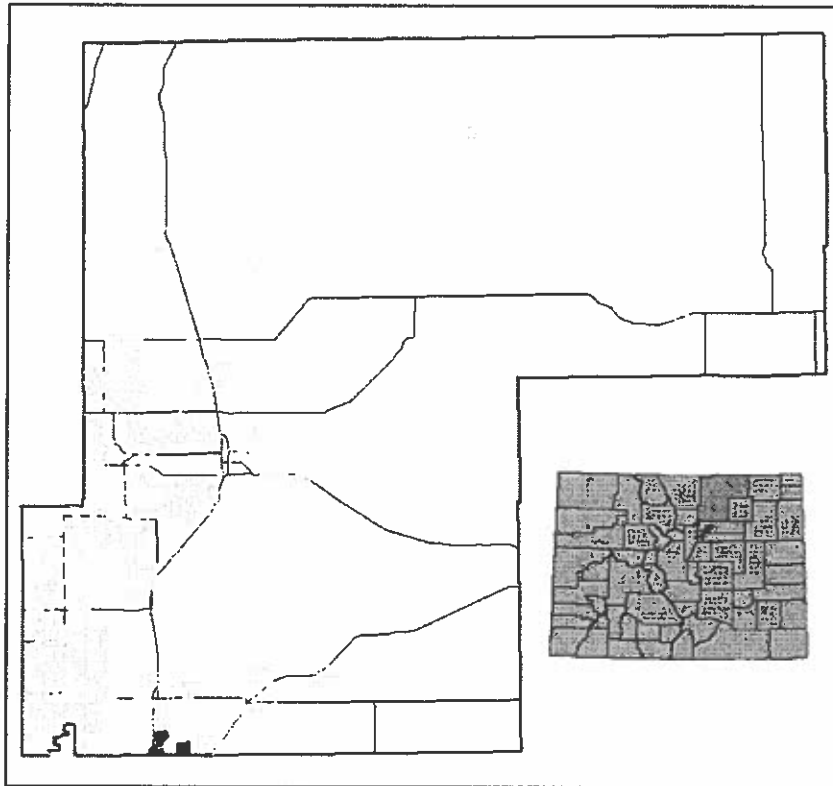


City of Brighton

The City of Brighton is located 20 miles north of downtown Denver and has a land area of 19.98 square miles. Incorporated in 1887, the city sits along the banks of the South Platte River. The closing of Denver's Stapleton Airport in the early 1990s and the opening of the Denver International Airport led to many changes for the City of Brighton. Rapid and numerous annexations were necessary to accommodate the increase in population driven by increased accessibility. Once a small town with agricultural roots, the City of Brighton is now one of the fastest growing cities in Colorado.



The following are the overall goals that the City of Brighton established in their Comprehensive Plan: *Brighton 2020: A Vision for Managing Change and Promoting Excellence*. These goals are the foundation and guide to the public and private sector as decisions are made that “effect the future quality of life of existing and future residents and the natural and build environment in which they live, learn, work, and play.” In the context of the Weld County Hazard Mitigation Plan and the City’s local hazard mitigation program, the achievement of the following goals will depend largely upon the city’s ability to successfully implement its hazard mitigation strategies and reduce risk to people and property from hazards.

- Preserve and enhance Brighton’s quality of life
- Preserve and enhance Brighton’s small town identity
- Promote and develop Brighton as a sustainable community
- Promote and protect Brighton’s “Free-Standing” community
- Maintain Brighton’s farming character
- Promote Brighton’s local history
- Promote community focal points

- Become an “inclusive” community
- Encourage interaction among residents

The large majority of Brighton’s long-term planning goals and visions depend on fostering a safe, hazard resilient community.

Community Profile

The table below summarizes key demographic and development related characteristics of the City of Brighton.

City of Brighton Statistics		
	City of Brighton	Colorado
Population, 2014	36,765	5,355,866
Population, % change April 1, 2010 to July 1, 2014	8.8%	6.5%
% Population under 5 years, 2010	8.6%	6.8%
% Population under 18 years, 2010	29.9%	24.4%
% Population 65 years and over, 2010	8.7%	10.7%
Language other than English spoken at home, % age 5+, 2009-2013	27.6%	16.8%
Homeownership Rate	68.8%	65.4%
Persons Per Household	3.13	2.53
Persons below poverty level, %, 2009-2013	8.2%	13.2%
Median Household Income, 2009- 2013	\$62,097	\$58,433

Source: US Census Bureau

Hazard Identification and Risk Assessment

The City of Brighton is situated in both Adams and Weld Counties. For the purpose of this plan, spatially analyzed hazard risks have been assessed for the areas of the city that lie specifically within Weld County.

NATURAL HAZARD	PROBABILITY	IMPACT	SPATIAL EXTENT	WARNING TIME	DURATION	RF RATING
Public Health Hazards	0.90	0.90	0.80	0.30	0.40	3.30
Straight-Line Winds & Tornadoes	0.90	0.90	0.80	0.40	0.10	3.10
HAZMAT	1.20	0.90	0.40	0.40	0.20	3.10
Extreme Temperatures	0.90	0.60	0.80	0.40	0.40	3.10
Severe Storm	1.20	0.60	0.80	0.30	0.10	3.00
Prairie Fire	0.60	0.60	0.60	0.40	0.30	2.50
Flood	0.60	0.60	0.40	0.40	0.40	2.40
Drought	0.60	0.30	0.80	0.10	0.40	2.20

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Land Subsidence	0.60	0.30	0.20	0.40	0.10	1.60
Earthquake	0.30	0.30	0.20	0.40	0.10	1.30
MODERATE RISK HAZARD (2.0 - 2.4): Flood; Drought						
Low Risk (1.9 or lower): Land Subsidence; Earthquake						

Vulnerability Assessment

This section provides a refined vulnerability assessment, specific for the City of Brighton, for those hazards that were identified as being rated HIGH in the preceding section. This analysis was conducted separately from that of the county-wide vulnerability assessment to specifically focus on the population, structures, infrastructure, and other assets unique to City of Brighton.








The results of the social vulnerability assessment are displayed on the map below. On the map, social vulnerability is represented at the census tract level by 5 classes of vulnerability: Low (bottom 20% of the county), Medium-Low, Medium, Medium-High, and High (top 20% of the county). The City of Brighton’s social vulnerability map shows social vulnerability within the community.

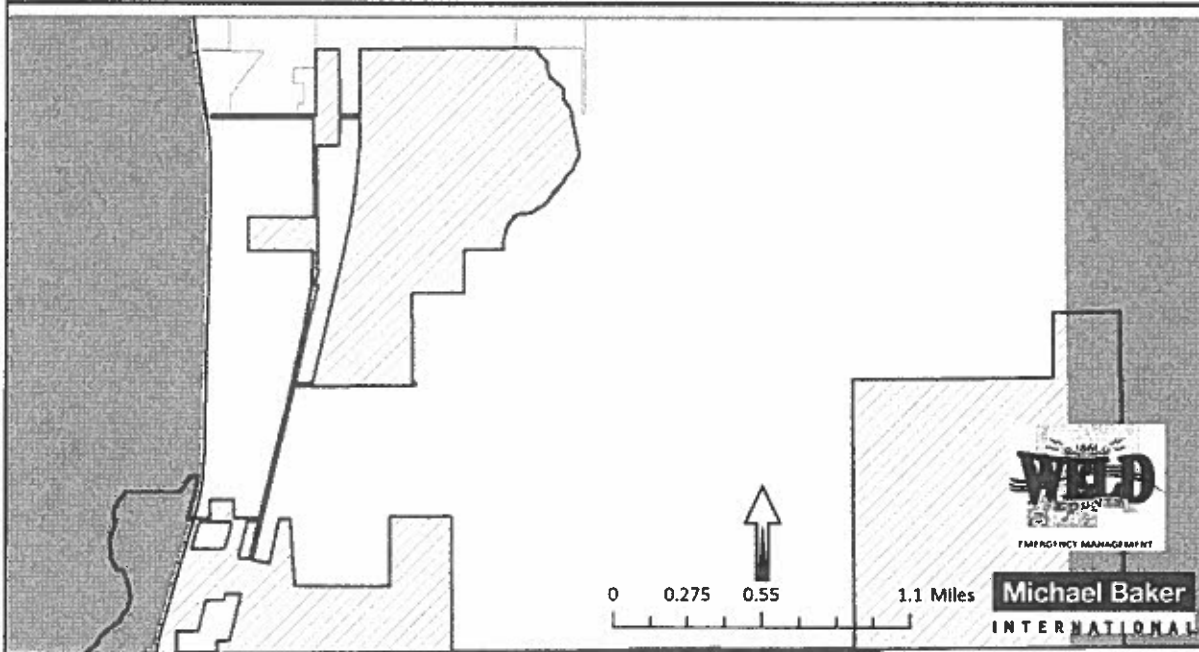
City of Brighton Social Vulnerability

Social vulnerability is represented as the social, economic, demographic, and housing characteristics that influence a community's ability to respond to, cope with, recover from, and adapt to hazard events. This index is grouped at the Census Tract level.

Due to the large geographic extent of Weld County, this information is best viewed using the web map developed for use during and after the hazard mitigation planning process. During the plan writing, the following URL will take readers to the web map: <http://www.weldhmp2016.com/home/risk-assessment>. Following this plan's approval and adoption, Weld County will then host this data at the following URL: <http://www.co.weld.co.us/Departments/GIS/GISMaps.html>

Legend

- | | |
|--|--|
|  City of Brighton |  High (Top 20%) |
|  Jurisdictions |  Medium - High |
|  Weld County |  Medium |
|  Major Roads |  Medium - Low |
| |  Low (Bottom 20%) |



Source: Colorado Division of Water Resources Dam Safety Branch, FEMA, Colorado Water Conservation Board

Brighton is characterized by a mix of medium to medium-high levels of social vulnerability. A deeper-dive into the individual social vulnerability indicators within the city will give local emergency managers, planners, and stakeholders an even clearer picture of which social vulnerability factors have the largest negative effect on the community and its resiliency. It is important that the city continue to monitor social vulnerability levels over time as demographics and economics change in the area.

Public Health Hazards

Public health hazards, including epidemics and pandemics, have the potential to cause serious illness and death, especially among those who have compromised immune systems due to age or underlying medical conditions. During the 2015 planning process, pandemic flu was identified as the key public health hazard in the county.

Inventory Exposed

Due to the regional nature of public health hazards, jurisdictions with higher numbers of socially vulnerable residents are expected to experience magnified impacts of public health hazards. This includes

places with high numbers of elderly residents, young children, low income families, and homeless individuals/outdoor laborers.

The table below shows data related to population vulnerability to public health hazards. Based on Census information and knowledge of social vulnerability to hazards, jurisdictions with high numbers of elderly residents, young children, and a high poverty rate can plan accordingly to provide appropriate services and mitigation assistance during public health hazards outbreaks.

Populations Vulnerable to Public Health Hazards			
	Age: 65 and Over (%)	Age: 5 and under (%)	Persons Below Poverty Level (%)
Colorado	10.9	6.8	12.9
City of Brighton	8.7	8.6	8.2

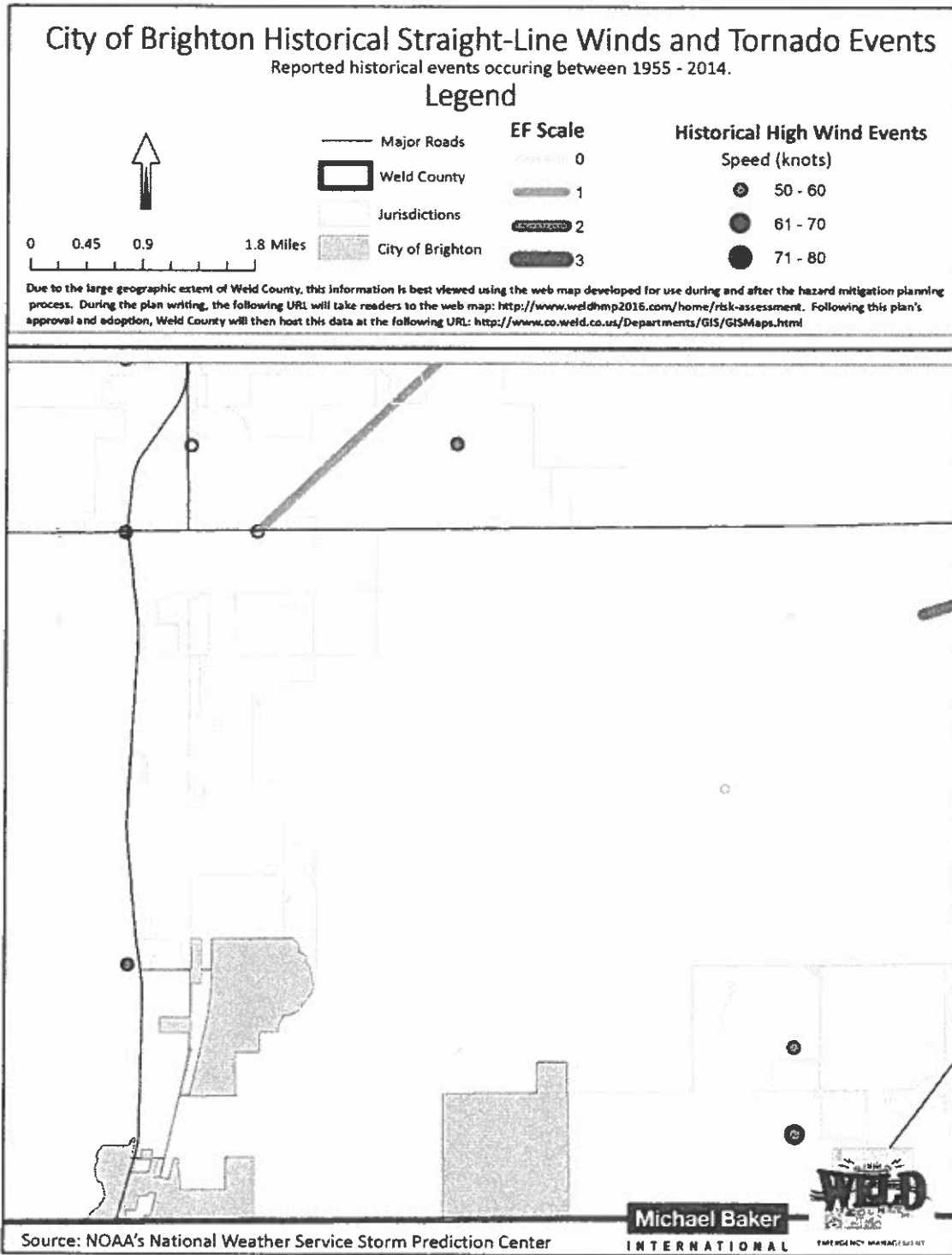
The City of Brighton has a lower percentage of elderly residents than does the state of Colorado. This is also true for the percentage of people living below poverty level in the town. A larger percentage of Brighton residents are under the age of 5 than the general population of Colorado. Based on these statistics, Brighton residents (in general) do not appear to be acutely vulnerable to the impacts of public health hazards. That said, future mitigation efforts related to public health hazards should focus on reaching those residents who are elderly, young children, live in poverty, or are homeless.

Potential Losses

Because there is no defined geographic boundary for public health hazards, all of the people and infrastructure within the City of Brighton are exposed to public health hazards. Those with elevated risk and potential loss are the homeless, infirm, elderly, young and low income families. Given the lack of historical data in the City of Brighton resulting from public health hazards, and that placing a dollar amount on the cost of a human life are beyond the scope of the Plan, annualized economic losses for the City of Brighton due to public health hazards are currently considered unquantifiable.

Straight-Line Winds & Tornadoes

According to the best available data, no injuries, deaths, property damage, or crop damages have been recorded within the City of Brighton due to high wind events or tornadoes. However, there have been tornadoes reported very close to both the eastern and western borders of the city limits.



Inventory Exposed

All assets located in the City of Brighton can be considered at risk from severe wind and tornadoes. This includes 36,765 people, or 100% of the city's population and all buildings and structures within the City. Most structures, including the city's critical facilities, should be able to withstand and provide adequate

protection from severe wind and tornadoes. Those facilities with back-up generators should be fully equipped to handle severe wind and tornado events should the power go out.

Potential Losses

Generally, straight-line wind events and tornadoes destroy private, commercial, and public property. Additional costs stem from debris removal, maintenance, repair, and response. Indirect costs include loss of industrial and commercial productivity as a result of damage to infrastructure, facilities, or interruption of services. Because no specific, community-wide loss estimation exists for wind and tornado hazards, potential losses are related to structure value. The building value of the structures in this area amounts to roughly \$128,302,206. Potential losses could be substantial.

HAZMAT

Based on data provided by Pipeline and Hazardous Materials Safety Administration's (PHMSA) Incident Reports Database there have been no HAZMAT incidents reported in the City of Brighton between 1972 and 2015. I-76 and Highway 85 are two major hazardous and nuclear materials transportation routes that run through and adjacent to the City. Further planning and research is necessary to identify the volume and frequency of hazardous materials movement along these transit corridors along with the location of fixed facilities.

Inventory Exposed

We can't accurately predict when or where a HAZMAT incident may occur. Therefore, for the purpose of this plan, all structures, natural resources, and people located within one mile of the designated hazardous and nuclear materials transportation routes are exposed to the impacts of a potential HAZMAT event. Structures, people, and natural resources located outside of a one mile buffer of these routes are also at risk of exposure.

Assets and people that are located within one mile of any industrial or commercial fixed sites are also at risk of exposure to the impacts of a HAZMAT release.

Potential Losses

HAZMAT related events occur throughout Weld County every year. The intensity and magnitude of these incidents depend on weather conditions, the location of the event, the time of day, and the process by which the materials are released. *Was it raining when the event happened? Were the hazardous materials being transported by rail when they were released or were they at a fixed facility? Did the spill happen during rush hour traffic or in the middle of the night?* All of these considerations matter when determining the risk and potential damages associated with a HAZMAT incident.

HAZMAT events have the potential to threaten lives and disrupt business activity. Moreover, HAZMAT incidents can cause serious environmental contamination to air, ground, and water sources.

Extreme Temperatures

According to the best available data, no injuries, deaths, or crop damages have been recorded within the City of Brighton due to extreme temperatures. There are two reports of extreme cold temperatures in central and southern Weld County on December 16-17, 1996. There is a great potential for extreme temperature events to occur at any given time.

Inventory Exposed

Due to the regional nature of extreme temperatures hazards, jurisdictions with higher numbers of socially vulnerable residents are expected to experience magnified impacts of extreme temperatures. This includes places with high numbers of elderly residents, low income families and homeless individuals/outdoor laborers.

The table below shows data related to population vulnerability to extreme temperatures. Based on Census information and knowledge of social vulnerability to hazards, jurisdictions with high numbers of elderly residents, a high poverty rate and/or large numbers of rental properties can plan accordingly to provide appropriate services and mitigation assistance during extreme temperature events.

Populations Vulnerable to Extreme Temperatures			
	Age: 65 and Over (%)	Persons Below Poverty Level (%)	Renter-occupied housing units (%)
Colorado	10.9	12.9	34.5
City of Brighton	8.7	8.2	31.2

The City of Brighton has a lower percentage of elderly residents than does the state of Colorado. This is also true for the percentage of people living below poverty level in the city. A slight larger percentage of Brighton residents own their homes than the general population of Colorado. Based on these statistics, Brighton residents (in general) do not appear to be acutely vulnerable to the impacts of extreme temperatures. That said, future mitigation efforts related to extreme temperature should focus on reaching those residents who are elderly, live in poverty or are homeless, or are renters.

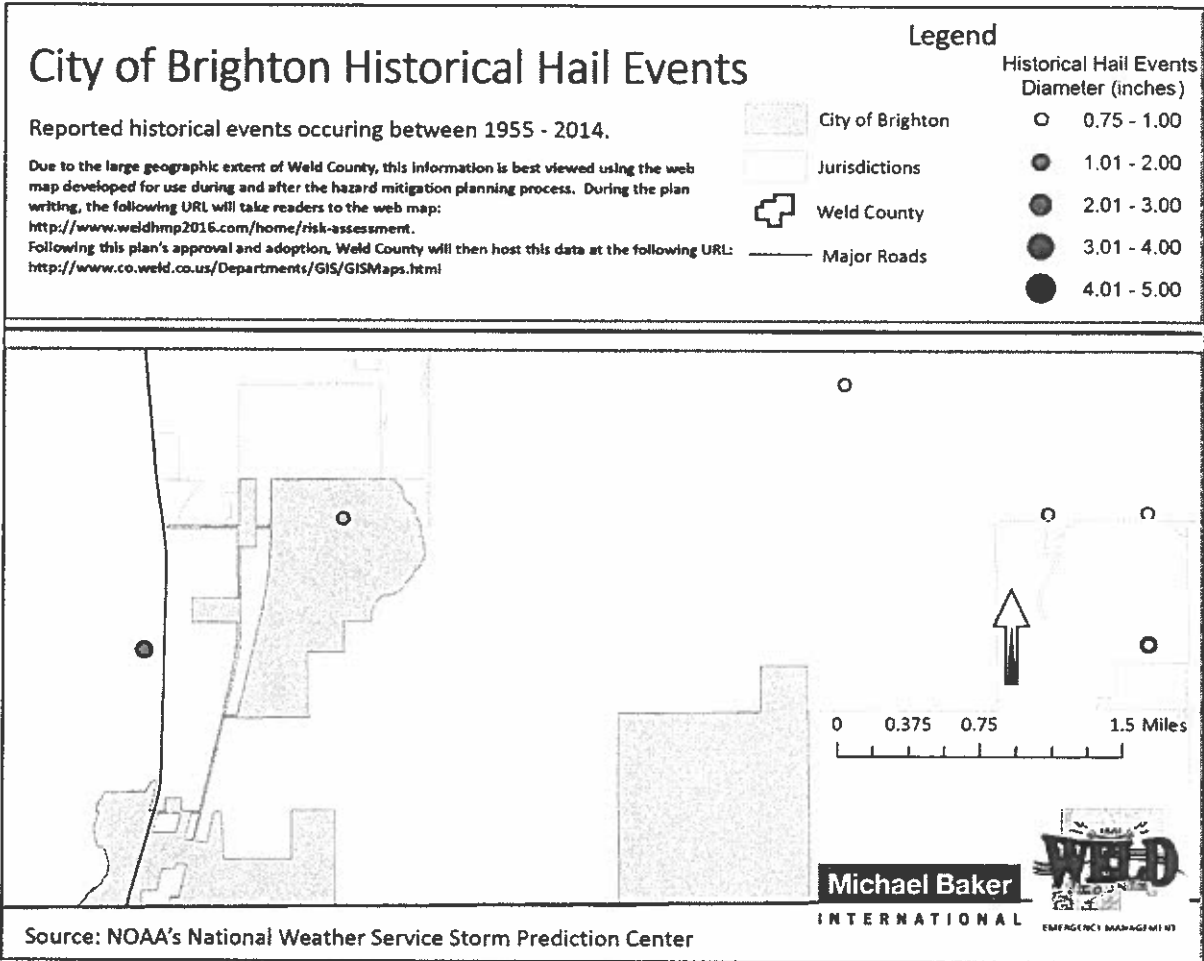
Potential losses

Because there is no defined geographic boundary for extreme temperature hazards, all of the people and infrastructure within the City of Brighton are exposed to extreme temperatures. Those with elevated risk and potential loss are the homeless, infirm, elderly, and low income families. Given the lack of historical data and limited likelihood of structural losses in the City of Brighton resulting from extreme heat or cold, and that placing a dollar amount on the cost of a human life are beyond the scope of the Plan, annualized economic losses for the City of Brighton due to extreme temperatures are currently considered unquantifiable.

Severe Storm (Hail, Lightning, Winter Storm)

Hail

According to the best available data there are no reported injuries, deaths, property damage, or crop damage in the City of Brighton. There was one hail event recorded within the city limits as well as several hail events that occurred less than one mile from the city limits, none of which reported injuries, deaths, property damage, or crop damage. Although there is no historic data showing hazardous impacts on the town, there is a great potential for hail events to occur at any given time.



Lightning

According to the best available data, no injuries, deaths, property damage, or crop damage have occurred within the City of Brighton caused by Lightning. Although there is no historic data showing hazardous impacts on the city, there is a great potential for Lightning to occur at any given time.

Winter Storm

According to NOAA's Storm Events Database, the City of Brighton has experienced 25 Winter Storms since 1996. There were no deaths, injuries or damage to crops reported for any of these storms. On December 28, 2006 there was report of a winter storm causing \$102,000 in property damage in central and southern Weld County. The City of Brighton is at high risk of experiencing Winter Storms during the winter months.

Inventory Exposed

All assets located in the City of Brighton can be considered at risk from severe storms. This includes 36,765 people, or 100% of the town's population and all buildings and infrastructure within the city. Damages primarily occur as a result of high winds, lightning strikes, hail, snow-loading, and flooding. Most structures, including the town's critical facilities, should be able to provide adequate protection from hail

but the structures could suffer broken windows and dented exteriors. Those facilities with back-up generators are better equipped to handle severe weather situation should the power go out.

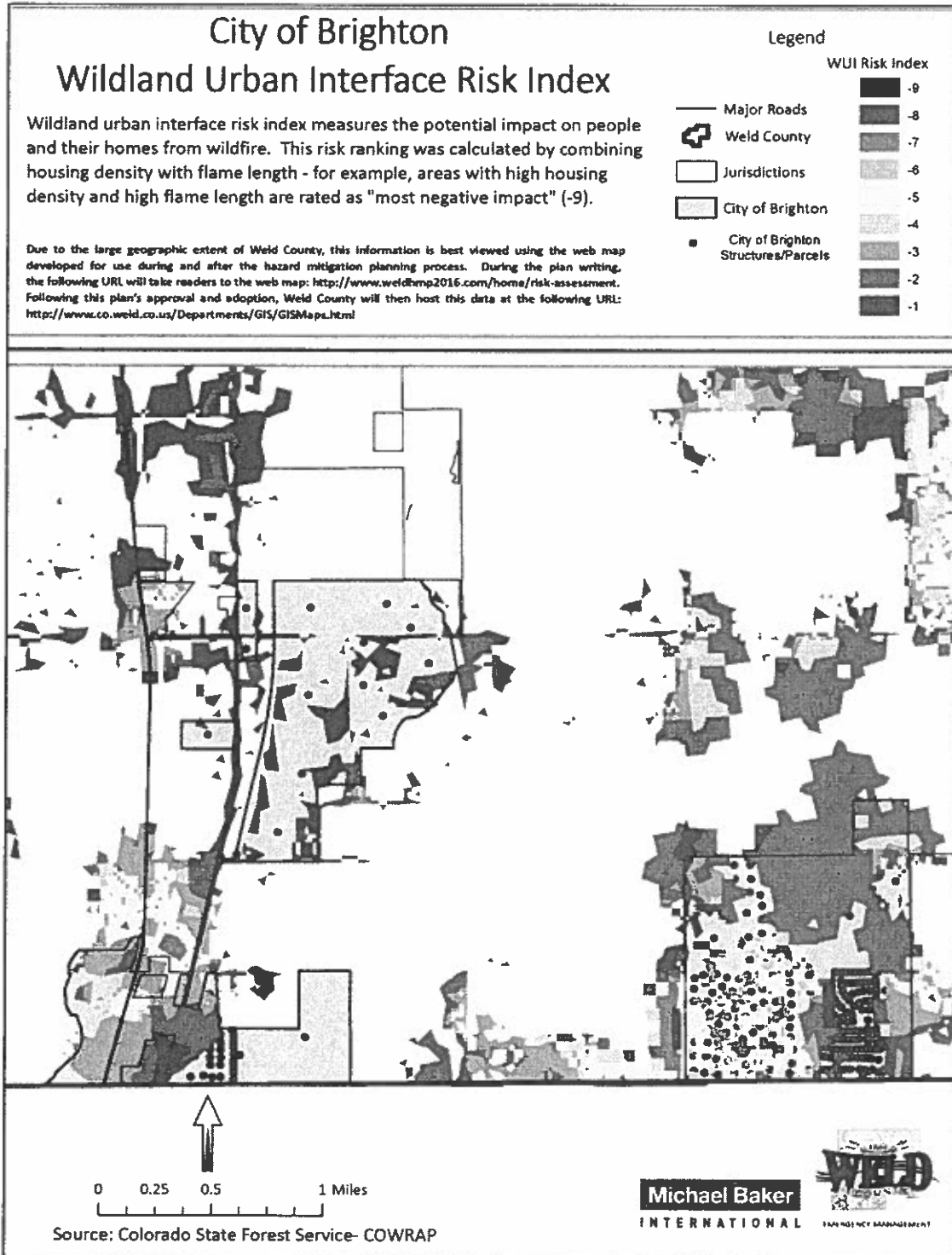
Potential Losses

Severe storms affect the entire planning area of the City of Brighton including all above-ground structures and infrastructure. Although losses to structures are typically minimal and covered by insurance, there can be impacts with lost time, maintenance costs, and contents within structures. A timely forecast may not be able to mitigate the property loss, but could reduce the casualties and associated injuries.

It appears possible to forecast these extreme events with some skill, but further research needs to be done to test the existing hypothesis about the interaction between the convective storm and its environment that produces the extensive swath of high winds. Severe storms will remain a highly likely occurrence for the City of Brighton. It is likely that lightning and hail will also be experienced in the area due to such storms.

Prairie Fire

There are a number of areas in the northeastern region of the city that are within the medium to highest level on the WUI Risk Index Scale. This means that the potential impact on people and homes from a Prairie Fire in those areas is medium to high in relationship to the rest of Weld County. This level of risk is derived by combining housing density with predicted flame length.



Inventory Exposed

Fires can extensively impact the economy of an affected area, including the agricultural, recreation and tourism industries, water resources, and the critical facilities upon which the City of Brighton depends. There are no areas of high wildfire threat according to the WUI Risk Index. There are areas of medium

threat. There are no identified critical facilities located in areas with the *moderate* wildfire threat total. The appraisal value of the structures within these *moderate* threat areas is approximately \$5,616,745.

Potential Losses

Currently, there is no method for estimating wildfire loss. In most cases, the emergency management community equates potential losses to assets exposed to wildfire as a method of quantifying and comparing potential losses across communities. The exposure data provided in the previous section (Inventory Assets Exposed) provides the clearest picture of potential losses to wildfire in the City of Brighton.

Capabilities Assessment

The capability assessment examines the ability of the City of Brighton to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the City’s hazard mitigation program.

Local Personnel

The ability of a community to implement a comprehensive mitigation strategy depends, in part, on available resources, including people and staff. The table below outlines the City’s capabilities as they relate to key personnel.

	Full Time	Part Time	None or Not-Identified
Emergency Manager	X		
Floodplain Administrator			X
Community Planner	X		
GIS Specialist	X		
Grant Writer			x

Land Use Planning and Codes

Local land use plans and building codes are tremendous tools for evaluating local policies related to hazard mitigation and risk reduction. Additionally, comprehensive master plans, capital improvement plans, stormwater plans and zoning ordinances all present opportunities for enhanced local capabilities. The table below outlines the City’s current capabilities as they relate to land use planning and codes.

	Yes (Y); No (N); I don’t know (IDK)
A zoning ordinance	Y
A hazard-specific ordinance	N
Local building codes	Y
A Comprehensive Plan / Master Plan	Y
A Capital Improvements Plan	Y



A Stormwater Plan	Y
A Continuity of Operations Plan (COOP)	Y
An Emergency Operations Plan (EOP)	Y
A Long-Term Recovery Plan	N
Participates in the NFIP	Y

Building codes are one tool that communities use to enhance public safety. For example, they can increase structural integrity, mitigate structure fires, and provide benefits in relation to natural hazard avoidance. In Colorado, land use regulations and building codes are typically implemented at the local level. Even without a statewide mandate, most counties and many municipalities have enacted regulations and codes. The City of Brighton has adopted a local building code requirement, demonstrating their understanding of the benefits codes provide, including reduced exposure to hazards.

Plan Maintenance and Implementation

The City of Brighton has developed a Plan Maintenance and Implementation Strategy outlining their method and schedule for keeping the plan current. The Implementation Strategy below also includes a discussion of how the city will continue public participation in the plan maintenance process.

Jurisdiction	Plan Maintenance and Implementation Strategy
City of Brighton	<p><i>"Our mitigation actions will be reviewed by Emergency Management annually, and by City Council and or Fire BOD as needed."</i></p> <p><i>"Mitigation actions, activities and information will be integrated into existing public education programs and shared via website and or social media as necessary."</i></p>

Integrating Hazard Mitigation into Local Planning

Through discussions at planning meetings and the use of an online survey, individual outreach, and phone calls, each participating jurisdiction brainstormed with the planning team to identify processes for integrating hazard mitigation into their local planning mechanisms and policies. The City of Brighton did not integrate the 2009 HMP into other local planning mechanisms. The table below lists the specific integration strategy identified by the City of Brighton based on the mitigation actions listed in this plan.

Jurisdiction	Strategy
City of Brighton	<p><i>"We will integrate hazard Mitigation actions into our existing public education/community training programs to continually increase awareness about local hazards and potential consequences."</i></p>

Mitigation Action Guides

The City of Brighton did have mitigation actions included in the 2010 DRCOG Hazard Mitigation Plan, included below.

Action	Project Need and Location	Responsible Agencies I - Lead Agency S - Support Agency	Status & Notes
Continued National Flood Insurance Program (NFIP) Participation	Multi-Jurisdiction Action In coordination with the UDFCD, continue to participate in the NFIP by implementing and improving upon effective floodplain and stormwater management practices.	Project Lead not identified	In Progress / Ongoing - majority of jurisdictions continue to participate in the NFIP, discussions regarding additional jurisdictional participation ongoing.
Coordinate with local water providers to continually identify and promote water conservation measures, including but not limited to, incentive programs, water efficient appliances, xeriscaping and the use of recycled water where feasible.	Multi-Jurisdiction Action	Project Lead not identified	No Longer Applicable / Remove - It was determined that this action is being addressed by various water districts serving the County.
Monitor proceedings of the Colorado Water Availability Task Force. When necessary, support water providers in the implementation of conservation measures	Multi-Jurisdiction Action	Project Lead not identified	In Progress / Ongoing - OEM will continue to monitor and support as necessary.
Provide the DRCOG HMP to other departments for possible integration into various planning efforts	Multi-Jurisdiction Action	Emergency Manager	In Progress / Ongoing - OEM will continue to involve the Public Works and Planning Departments in all future Hazard Mitigation Planning activities.

Jurisdiction or Organization: City of Brighton Preparedness and Mitigation Guides

PRIORITY: MEDIUM

HAZARDS ADDRESSED: All

WELD COUNTY 2016 MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

LOCATION: City of Brighton and Brighton Fire Rescue District	GOALS ADDRESSED: 2, 4
RECOMMENDATION DATE: 10/20/2015	OBJECTIVES ADDRESSED:
TARGET COMPLETION DATE: 12/31/2016	2.2.2; 4.1.1.2
ISSUE: Residents need general information about local hazards, preparedness and response activities	
RECOMMENDATION: Hazard Mitigation and Preparedness Guides have been developed to focus on education of local hazards, and must continue to be distributed to residents within the City of Brighton and Brighton Fire Rescue District.	
ACTION: Continue to distribute existing mitigation guides to residents within both the City of Brighton and the Brighton Fire Rescue District	
LEAD AGENCY: City of Brighton, Brighton Fire Rescue District	EXPECTED COST: The Guides have already been purchased, remaining cost is the staff time necessary to distribute guides to residents
SUPPORT AGENCIES: Brighton CERT, 27J School District	POTENTIAL FUNDING SOURCES:N/A.
<p>PROGRESS MILESTONES:</p> <p>Guides developed and printed</p> <p>Guides have been distributed throughout 2012-2015</p> <p>Guides have been packaged up for distribution to the 27J school locations on 11/14/15.</p> <p>Brighton OEM will continue working with the School District to schedule and deliver guides to make available to each student in the 27J school district in Brighton.</p>	

City of Brighton: Weld Outfall	
PRIORITY: MEDIUM	HAZARDS ADDRESSED: Flood
LOCATION: City of Brighton	GOALS ADDRESSED: 3
RECOMMENDATION DATE: 12/4/2010	OBJECTIVES ADDRESSED:
TARGET COMPLETION DATE: 12/31/2030	3.2.2.
ISSUE: The far northern portion of the City needs drainage improvements to convey storm flows to the South Platte River.	
RECOMMENDATION: Design and construct an outfall system to convey flows to South Platte River.	
ACTION: Complete engineering civil drawings and construct the outfall system.	
LEAD AGENCY: City of Brighton	EXPECTED COST: \$20,000,000
SUPPORT AGENCIES: N/A	POTENTIAL FUNDING SOURCES: Funding will come from Stormwater Impact fees. There is a potential for grant money as it becomes available.

PROGRESS MILESTONES: This outfall system was looked at in the 2006 Outfall System Plan and is being re-evaluated in the current master drainage plan.

City of Brighton: Robin Place & N 6th Ave Flood Mitigation

PRIORITY: MEDIUM

HAZARDS ADDRESSED: Flood

LOCATION: City of Brighton

GOALS ADDRESSED: 3

RECOMMENDATION DATE: 12/4/2010

OBJECTIVES ADDRESSED:

TARGET COMPLETION DATE: completed

3.2.2.

ISSUE: This project has been completed. The City has re-directed flows away from this house and to a larger conveyance system. No issues have been reported from the homeowner in the recent years. This project can be removed from the list.

RECOMMENDATION: City has redirected flows

ACTION: The City has re-directed flows away from this house and to a larger conveyance system.

LEAD AGENCY: City of Brighton

EXPECTED COST: N/A

SUPPORT AGENCIES: N/A

POTENTIAL FUNDING SOURCES: N/A

PROGRESS MILESTONES: Complete

City of Brighton: 33 Sunset Drive Flood Mitigation

PRIORITY: MEDIUM

HAZARDS ADDRESSED: Flood

LOCATION: City of Brighton

GOALS ADDRESSED: 3

RECOMMENDATION DATE: 12/4/2010

OBJECTIVES ADDRESSED: C, E

TARGET COMPLETION DATE: completed

3.2.2.

ISSUE: This address experienced flooding at sidewalk and driveway frequently after significant storm events

RECOMMENDATION: Install inlet to alleviate flooding

WELD COUNTY 2016 MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

ACTION: The City has installed 2 inlet at this location to alleviate flooding issues. An overflow pipe has been provided for any flows not intercepted by the inlets. No issues have been reported from the homeowner in the recent years. This item can be removed.

LEAD AGENCY: City of Brighton Utilities and Streets

EXPECTED COST: N/A

SUPPORT AGENCIES: N/A

POTENTIAL FUNDING SOURCES: N/A

PROGRESS MILESTONES: Project completed

City of Brighton: North Outfall/Hughes Station Apartments Drainage Improvement Project Phase 1 Flood Mitigation

PRIORITY: MEDIUM

HAZARDS ADDRESSED: Flood

LOCATION: City of Brighton

GOALS ADDRESSED: 3

RECOMMENDATION DATE: 12/4/2010

OBJECTIVES ADDRESSED:

TARGET COMPLETION DATE: completed

3.2.2.

ISSUE: Identified need to redirect run off flows generated on Highway 85 into Hughes' detention pond causing the pond to overflow and flood the private parking lot and nearby roadways.

RECOMMENDATION: Redirect flows away from the detention pond.

ACTION: The City redirected flows from Highway 85. Flows have been directed away from the detention pond and to the City's North Outfall-Denver Alignment.

LEAD AGENCY: City of Brighton

EXPECTED COST: N/A

SUPPORT AGENCIES: N/A

POTENTIAL FUNDING SOURCES: N/A

PROGRESS MILESTONES: Completed.

City of Brighton: North Outfall/Hughes Station Apartment Drainage Improvement Project Phase 2 Flood Mitigation

PRIORITY: MEDIUM

HAZARDS ADDRESSED: Flood

WELD COUNTY 2016 MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

LOCATION: City of Brighton	GOALS ADDRESSED: 3
RECOMMENDATION DATE: 12/4/2010	OBJECTIVES ADDRESSED:
TARGET COMPLETION DATE: 12/31/2030	3.2.2.
ISSUE: The far northern portion of the City needs drainage improvements to convey storm flows to the South Platte River.	
RECOMMENDATION: Design and construct an outfall system to convey flows to South Platte River.	
ACTION: A portion of this project has been complete. An inlet has been added at the intersection of Denver and Main. The City has built the outfall and constructed a 78" conveyance pipe from the outfall with the South Platte River to approximately the intersection of Denver and Main. Additional MAGs have been created to outline the phases of the project that still need to be completed.	
LEAD AGENCY: City of Brighton	EXPECTED COST: \$20,000,000
SUPPORT AGENCIES: N/A	POTENTIAL FUNDING SOURCES: Funding will come from Stormwater Impact fees. There is a potential for grant money as it becomes available.
PROGRESS MILESTONES: This outfall system was looked at in the 2006 Outfall System Plan and is being re-evaluated in the current master drainage plan.	

City of Brighton: Telluride & Bridge St. Flood Mitigation

PRIORITY: MEDIUM	HAZARDS ADDRESSED: Flood
LOCATION: City of Brighton	GOALS ADDRESSED: 3
RECOMMENDATION DATE: 12/4/2010	OBJECTIVES ADDRESSED: C, E
TARGET COMPLETION DATE: TBD 2016	3.2.2.
ISSUE: The storm drain inlet box located at the SE corner of Telluride and Bridge into the Pheasant Ridge Pond. When the pond is full, the inlet acts as a spillway, flooding nearby streets, and causing damages to vehicles	
RECOMMENDATION: A private developer has agreed to fix this issue as a condition of future development in the area. It should occur in the next year. This can be removed from the list.	
ACTION: A private developer has agreed to fix this issue as a condition of future development in the area. It should occur in the next year. This can be removed from the list.	
LEAD AGENCY: City of Brighton	EXPECTED COST: N/A

SUPPORT AGENCIES: N/A

POTENTIAL FUNDING SOURCES: Funding will come from private developer as part of an agreement regarding future developments.

PROGRESS MILESTONES: Project will be completed by developer in 2016.

The following Mitigation Action Guide presents Brighton’s new mitigation action that was developed for the 2016 Plan.

CITY OF BRIGHTON/BRIGHTON FIRE RESCUE DISTRICT: Action Item #1: Integrate mitigation/preparedness planning into existing public education programs around the city to enhance resiliency of the community around all hazard vulnerabilities.

PRIORITY: High

HAZARDS ADDRESSED: Drought, Earthquake, Land Subsidence, Extreme Temperatures, Flood, Severe Storm, Wind & Tornado, Fire, Public Health, Hazmat

LOCATION: City of Brighton and Brighton Fire Rescue District

GOALS ADDRESSED: 1,2,3

RECOMMENDATION DATE: 10/20/2015

OBJECTIVES ADDRESSED: A,B,E

TARGET COMPLETION DATE: 10/20/2016

Ongoing programs

ISSUE: Residents must be aware of local hazards and the mitigation/preparedness actions they can take to assist in protecting themselves and their families from the adverse effects and to enhance community resiliency.

RECOMMENDATION: Continued and additional community education and training to specifically address local hazards, containing detailed recommendations around potential community action items, which are crucial to continue to reinforce the need to take personal and individual action to mitigate risk related to local hazards.

ACTION: Add information about local hazards and mitigation strategies into existing citizen centered trainings and/or developed hazard and response specific training for citizens as needed to provide information to residents about mitigation/preparedness options in their community.

LEAD AGENCY: City of Brighton/Brighton Fire Rescue District’s Office of Emergency Management

EXPECTED COST: \$5,000. Additional printing and staff time to deliver

SUPPORT AGENCIES: Brighton PD, Brighton CERT, Weld County OEM, Adams County OEM, North Central Region.

POTENTIAL FUNDING SOURCES: HSGP, EMPG, local budgets

PROGRESS MILESTONES: An All Hazards Emergency Operations Plan (EOP) was developed and adopted by the City of Brighton and the Brighton Fire Rescue District in 2015. As part of our all hazards EOP, a Hazard/Risk analysis was conducted to identify the risks to which the City of Brighton and the Brighton Fire Rescue District are most vulnerable, public education about these top hazards are key to preparing our residents to better address and adapt to these hazards. Integration of preparedness and mitigation actions into public education programs which are directly related to these key hazards are essential. The City of Brighton is currently concluding the 2015 annual CERT class, of which local hazard identification and response is a part of. In looking forward to 2016 and beyond, education about local hazards and mitigation strategies will be available at city sponsored events, within classes offered to the public (winter weather safety, individual preparedness etc.) and within presentations which are requested by community members tailored specifically to a local group or organization.

Jurisdiction or Organization: City of Brighton Expansion of Outdoor Warning System to portions of unincorporated Adams and Weld Counties

PRIORITY: HIGH	HAZARDS ADDRESSED: Tornado/All Hazards
LOCATION: Todd Creek, Great Rock and Vestas locations	GOALS ADDRESSED: 1
RECOMMENDATION DATE: 10/20/2015	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 12/31/2016	
ISSUE: Several areas within the Brighton Fire Rescue District and the north area (Weld County) of the City of Brighton are without outdoor warning sirens.	
RECOMMENDATION: Installation of additional warning sirens in the locations lacking coverage to warn residents of potential hazards.	
ACTION: Prioritize locations and use available funds to complete installations of outdoor warning sirens	
LEAD AGENCY: City of Brighton, Brighton Fire Rescue District	EXPECTED COST: approx. 45K for each unit
SUPPORT AGENCIES: Brighton IT Dept., Adams County Communications Dept. (AdCom911)	POTENTIAL FUNDING SOURCES: The units needed at Todd Creek and Great Rock locations are being funded, in part, by 4145 HMGP funds. The unit needed to cover the Vestas location may be available to move from a different location pending the completion of a shared use agreement with Verizon regarding and existing unit.
PROGRESS MILESTONES: For sirens at Great Rock and Todd Creek: RFP for project out on Nov 20 th , 2015; Close date scheduled as December 15th 2015. Anticipated completion date of April , 2015 For vestas location (Weld County):	

City of Brighton is currently working with Verizon to complete an agreement to use one of our existing poles and for them to purchase a duplicate unit

Jurisdiction or Organization: City of Brighton Emergency Services Support Generator

PRIORITY: HIGH

HAZARDS ADDRESSED: All

LOCATION: City of Brighton Police Department Administration (3401 E. Bromley Lane Brighton , CO 80601)

GOALS ADDRESSED: 2

RECOMMENDATION DATE: 10/20/2015

OBJECTIVES ADDRESSED: E

TARGET COMPLETION DATE: 06/31/2017

ISSUE: Currently, the city maintains only a small generator at this location, capable only of supporting minimal emergency lighting, the security of detention cells, and limited communication systems. The current generator cannot support the emergency coordination functions which take place at this location.

RECOMMENDATION: The wiring and installation of a 500KVA generator and a 1200amp transfer switch would allow for a reliable back up power source at a single critical city facility. This generator would support key city staff and services at this location and would allow for the relocation of staff and continuity of critical services. In addition, emergency support related services and functions are coordinated from this location. Critical emergency support functions- operation of the Emergency Operations Center (EOC), location of the Policy Group meeting area and information center, the Joint Information Center (JIC) and local law enforcement operations are designated to take place at this location.

ACTION: Install a generator and associated wiring at the Brighton Police Department in an effort to support emergency functions during a short or long term power outage.

LEAD AGENCY: City of Brighton

EXPECTED COST: total cost of generator and wiring of PD building estimated \$200,000

SUPPORT AGENCIES: Brighton Fire Rescue District

POTENTIAL FUNDING SOURCES:
HMGP funding, City of Brighton Capital Improvements budget

PROGRESS MILESTONES:

Develop and publish an RFP

Construction to wire the building (in coordination with PD and United Power) to include locating, digging, accessing and splitting existing cabling

Install transfer switch and complete wiring

Complete installation of generator and initiate testing

City of Brighton: North Outfall Phase II

PRIORITY: HIGH	HAZARDS ADDRESSED: Flood
LOCATION: City of Brighton	GOALS ADDRESSED: 1
RECOMMENDATION DATE: 12/4/2015	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 12/31/2018	
ISSUE: The core residential area of Brighton must have an upgraded outfall system.	
RECOMMENDATION: Design and construct a larger outfall system to convey flows to South Platte River. Add additional inlets and piping network to more efficiently collect storm runoff.	
ACTION: Complete engineering civil drawings and construct the outfall system.	
LEAD AGENCY: City of Brighton	EXPECTED COST: \$2,400,000
SUPPORT AGENCIES: Urban Drainage and Flood Control District	POTENTIAL FUNDING SOURCES: Funding will come from Stormwater Impact fees and from UDFCD. There is a potential for HMGP funding as it becomes available.
PROGRESS MILESTONES: The City, along with UDFCD, completed the first phase of this project in previous years. An engineering firm is currently completing plans for this phase and providing thirty-percent plans for the future phase(s).	

City of Brighton: North Outfall Phase III

PRIORITY: HIGH	HAZARDS ADDRESSED: Flood
LOCATION: City of Brighton	GOALS ADDRESSED: 1
RECOMMENDATION DATE: 12/4/2015	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 12/31/2020	
ISSUE: The core residential area of Brighton must have an upgraded outfall system.	
RECOMMENDATION: Design and construct a larger outfall system to convey flows to South Platte River. Add additional inlets and piping network to more efficiently collect storm runoff.	
ACTION: Complete engineering civil drawings and construct the outfall system.	
LEAD AGENCY: City of Brighton	EXPECTED COST: \$4,800,000
SUPPORT AGENCIES: Urban Drainage and Flood Control District	POTENTIAL FUNDING SOURCES: Funding will come from Storm water Impact fees and from UDFCD. There is a potential for grant money as it becomes available.

PROGRESS MILESTONES: The City, along with UDFCD, completed the first phase of this project in previous years. An engineering firm is currently completing plans for this phase and providing thirty-percent plans for the future phase(s).

City of Brighton: Master Drainage Plan

PRIORITY: HIGH	HAZARDS ADDRESSED: Flood
LOCATION: City of Brighton	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 5/4/2015	OBJECTIVES ADDRESSED: C, E
TARGET COMPLETION DATE: 12/31/2016	
ISSUE: Comprehensive master planning efforts are needed to provide guidance to the City.	
RECOMMENDATION: The City needs to hire an engineering consulting firm to complete a comprehensive master drainage plan.	
ACTION: Hire a consulting firm.	
LEAD AGENCY: City of Brighton	EXPECTED COST: \$250,000
SUPPORT AGENCIES: Urban Drainage and Flood Control District	POTENTIAL FUNDING SOURCES: Funding will come from already available stormwater funding.
PROGRESS MILESTONES: The City, along with UDFCD, has hired an engineering consulting firm to complete the master drainage plan and to continually update this plan as necessary.	

City of Brighton: Second and Egbert Drainage Improvements

PRIORITY: HIGH	HAZARDS ADDRESSED: Flood
LOCATION: City of Brighton	GOALS ADDRESSED: 1
RECOMMENDATION DATE: 12/4/2015	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 12/31/2019	
ISSUE: An undersized drainage pipe and lack of inlet do not provide appropriate drainage at this intersection.	
RECOMMENDATION: Design and construct drainage infrastructure to alleviate flooding at this intersection.	
ACTION: Complete engineering civil drawings and construct the infrastructure.	



LEAD AGENCY: City of Brighton	EXPECTED COST: \$4,800,000
SUPPORT AGENCIES: N/A	POTENTIAL FUNDING SOURCES: Funding will come from storm water funds.
PROGRESS MILESTONES: The City has included this as an area to look closer at within the master drainage plan.	

City of Brighton: Third Creek and Brighton Road

PRIORITY: HIGH	HAZARDS ADDRESSED: Flood
LOCATION: City of Brighton	GOALS ADDRESSED: 3
RECOMMENDATION DATE: 12/4/2015	OBJECTIVES ADDRESSED: C, E
TARGET COMPLETION DATE: 12/31/2019	3.2.2.
ISSUE: The Third Creek Crossing under Brighton Road has become silted and is not adequately sized to pass the 100-year flows.	
RECOMMENDATION: Design and construct a 100-year crossing under Brighton Road.	
ACTION: Complete engineering civil drawings and construct the crossing.	
LEAD AGENCY: City of Brighton	EXPECTED COST: \$350,000
SUPPORT AGENCIES: Urban Drainage and Flood Control District	POTENTIAL FUNDING SOURCES: Funding will come from Stormwater Impact fees and from UDFCD. There is a potential for grant money as it becomes available.
PROGRESS MILESTONES: The City has included this as an area to look closer at during the master drainage plan formation.	
The City is currently participating with UDFCD and other jurisdictions to complete a Third Creek master drainage plan and flood hazard area delineation study.	

City of Brighton: 11th and Bridge Improvements

PRIORITY: HIGH	HAZARDS ADDRESSED: Flood
LOCATION: City of Brighton	GOALS ADDRESSED: 1
RECOMMENDATION DATE: 12/4/2015	OBJECTIVES ADDRESSED: C, E
TARGET COMPLETION DATE: 12/31/2017	
ISSUE: This intersection frequently floods after minor and major storm systems.	

RECOMMENDATION: Have the engineering team creating the City's master drainage plan look for the cause of the issues at this location.

ACTION: Complete any necessary improvements recommended by the engineering firm.

LEAD AGENCY: City of Brighton

EXPECTED COST: Unknown

SUPPORT AGENCIES:

POTENTIAL FUNDING SOURCES: Funding will come from Stormwater fees.

PROGRESS MILESTONES: The City will have the engineering team completing the master drainage plan look at this area closely.

City of Brighton: South Brighton Outfall

PRIORITY: HIGH

HAZARDS ADDRESSED: Flood

LOCATION: City of Brighton

GOALS ADDRESSED: 1

RECOMMENDATION DATE: 12/4/2015

OBJECTIVES ADDRESSED: C, E

TARGET COMPLETION DATE: 12/31/2025

ISSUE: The far southern portion of the City needs drainage improvements to convey storm flows to the South Platte River.

RECOMMENDATION: Design and construct an outfall system to convey flows to South Platte River.

ACTION: Complete engineering civil drawings and construct the outfall system.

LEAD AGENCY: City of Brighton

EXPECTED COST: \$20,000,000

SUPPORT AGENCIES: Urban Drainage and Flood Control District

POTENTIAL FUNDING SOURCES: Funding will come from Stormwater Impact fees and from UDFCD. There is a potential for grant money as it becomes available.

PROGRESS MILESTONES: This outfall system was looked at in the 2006 Outfall System Plan and is being re-evaluated in the current master drainage plan.

Letter of Intent to Participate



City of Brighton
 500 South 4th Avenue
 Brighton, CO 80601
 303-655-2000 Office
 www.brightonco.gov

August 26, 2014

Weld County Office of Emergency Management
 Director Roy Rudisill
 1150 O Street
 Greeley, CO 80632

Re: "Statement of Intent to Participate" as a participating jurisdiction in Weld County's Multi-Jurisdictional Hazard Mitigation Plan (HMP)

Dear Director Rudisill,

In accordance with the Federal Emergency Management Agency's (FEMA) Local Hazard Mitigation Plan (HMP) requirements, under 44 CFR §201.6, which specifically identify criteria that allow for multi-jurisdictional mitigation plans, the City of Brighton is submitting this letter of intent to confirm that the City of Brighton has agreed to participate in Weld County's Multi-Jurisdictional Hazard Mitigation Planning effort.

Further, as a condition to participating in the mitigation planning, City of Brighton agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as is necessary and in a timely manner to the Weld County Office of Emergency Management, to complete the plan in conformance with FEMA requirements.

The City of Brighton understands that it must engage in the following planning process, as more fully described in FEMA's *Local Mitigation Planning Handbook* dated March 2013 including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction;
- Demonstration that there has been proactively offered an opportunity for participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.);
- Documentation of an effective process to maintain and implement the plan;
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by an agreement between the Lead Jurisdiction and the Participating Jurisdiction, I, Stephanie Hackett commit the City of Brighton's Office of Emergency Management to the Weld County Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 27th day of August, 2014

Stephanie Hackett
 Emergency Management Coordinator
 City of Brighton