
FEMA FY 2020 Building Resilient Infrastructure and Communities (BRIC) & Flood Mitigation Assistance (FMA) Notice of Intent

The Notice of Intent is a grant proposal Sub-Applicants submit to DEMA, in order to be considered for national competition under FEMA's BRIC & FMA grants. Once projects are reviewed and ranked, Sub-Applicants will be notified by DEMA's Mitigation Office regarding next steps in the application process.

If eligible, a proposal can be submitted under both BRIC & FMA.

The NOI is NOT the actual application for the BRIC or FMA grant.

If you have any questions or issues, please reach out to mitigation@azdema.gov

Sub-Applicant Organization Information

1. Sub-Applicant Name

Pinal County

2. Sub-Applicant Organizational Unit (ex: Transportation Department)

Emergency Management

3. Sub-Applicant Type

Local Government

4. Program/Project Congressional District (check all that apply)

1, 4

5. Program/Project Legislative District (check all that apply)

8, 11, 16

Contact Information

1. Are you the Primary Point of Contact?

No

1.a If you are not the Primary POC, who is?

Charles Kmet

1.b What is their title?

Emergency Manager

1.c What is their email address?

charles.kmet@pinal.gov

1.d What is their phone number?

5208666415

2. Who is the Alternative Point of Contact?

Heather Patel

2.a What is their title?

Grants Administrator

2.b What is their email address?

heather.patel@pinal.gov

2.c What is their phone number?

5208666422

3. Are you the Applicant Agent?

Yes

Hazard Mitigation Plan

1. Does your community have a current FEMA approved Hazard Mitigation Plan?

Yes

1.a What is the name of the plan?

Pinal County Multi-Jurisdictional Hazard Mitigation Plan 2016

1.b When does the plan expire?

08/18/2022

1.c Where in the plan is your proposal mentioned, or the hazard you're mitigating mentioned? How is the hazard associated to your proposal?

Severe wind is identified within the Pinal County Multi-Jurisdictional Hazard Mitigation Plan Risk Assessment and the project is listed under the Mitigation Strategies.

Grant Questions

1. What grant is this NOI for? (Check all that apply)

Building resilient Infrastructure and Communities (BRIC)

1.a Under BRIC, what is this NOI for?

Hazard Mitigation Plan or Associated Planning Efforts

2. Is the Sub-Applicant an impoverished community? As defined by FEMA.

No

3. What is the project name?

Landscape alternatives to reduce wind velocity

Grant Proposal

1. Situational Description: Describe the problem that needs to be solved. If applicable, include past occurrences and how often they occur.

Pinal County complete a Hazard Mitigation Plan in 2016. Hazards were evaluated for the unincorporated areas of Pinal County and nine local jurisdictions. Each risk was assessed answering the fundamental questions of what can occur, how often it is likely to occur, and how bad the effects could be. The primary components of this risk assessment are generally categorized according to: hazard identification, hazard profiling, and vulnerability analysis.

Each identified hazard received a Calculated Priority Risk Index (CPRI) evaluation and score based on four categories: probability, magnitude/severity, warning time, & duration. The CPRI value is obtained by assigning varying degrees of risk to four categories for each hazard, and then calculating an index value based on a weighting scheme. A detailed description of the index and rating scale is provided in the Plan.

Severe wind was identified as a hazard to be mitigated within unincorporated Pinal County and the nine jurisdictions included in the plan. Aside from flooding, severe wind was the only hazard of the eight identified hazards that was a concern countywide.

The 2016 Hazard Mitigation Plan provides the following description of the hazard.

Description

The hazard of severe wind encompasses all climatic events that produce damaging winds. For Pinal County, severe winds usually result from either extreme pressure gradients that usually occur in the spring and early summer months, or from thunderstorms. Thunderstorms can occur year-round and are usually associated with cold fronts in the winter, monsoon activity in the summer, and tropical storms in the late summer or early fall. Three types of damaging wind related features typically accompany a thunderstorm: downbursts, straight line winds, and infrequently tornadoes.

Downbursts are columns of air moving rapidly downward through a thunderstorm. When the air reaches the ground, it spreads out in all directions, creating horizontal wind gusts of 80 mph or higher. Downburst winds have been measured as high as 140 mph. Some of the air curls back upward with the potential to generate a new thunderstorm cell. Downbursts are called macrobursts when the diameter is greater than 2.5 miles, and microbursts when the diameter is 2.5 miles or less. They can be either dry or wet downbursts, where the wet downburst contains precipitation that continues all the way down to the ground, while the precipitation in a dry downburst evaporates on the way to the ground, decreasing the air temperature and increasing the air speed. In a microburst the wind speeds are highest near the location where the downdraft reached the surface, and are reduced as they move outward due to the friction of objects at the surface. Typical damage from downbursts includes uprooted trees, downed power lines, mobile homes knocked off their foundations, block walls and fences blown down, and porches and awnings blown off homes.

Straight line winds are developed similar to downbursts, but are usually sustained for greater periods as a thunderstorms reaches the mature stage, traveling parallel to the ground surface at speeds of 75 mph or higher. These winds are frequently responsible for generating dust storms and sand storms, reducing visibility and creating hazardous driving conditions.

A tornado is a rapidly rotating funnel (or vortex) of air that extends toward the ground from a cumulonimbus cloud. Most funnel clouds do not touch the ground, but when the lower tip of the funnel cloud touches the earth, it becomes a tornado and can cause extensive damage. For Pinal County, tornadoes are the least common severe wind to accompany a thunderstorm.

History

September 2014, a train derailment caused by a severe wind event resulted in 30 cargo cars toppling over and off the tracks in Eloy. Other than creating a large disruption to railway traffic, there was no other impact to property or lives.

July 2012, a severe wind dust storm caused a tanker and multi-car accident on the highway in Eloy. The accident resulted in two fatalities and the highway being shut-down for 8 hours and being rerouted traffic through State Route 79. One of the vehicles damaged power lines causing a power loss in the Red Rock community. Damages are estimated to exceed \$250,000.

November 2009, areas of blowing dust along Interstate 10 resulted in several vehicle collisions near the Casa Grande and Eloy areas including a fatal collision between a mini-van and tractor/trailer. Locally dense blowing dust reduced visibility, causing the mini-van to collide with the tractor/trailer from behind. Four other accidents occurred as a result of the locally dense blowing dust, all of them near mile markers 214 and 215 on Interstate 10. One of these collisions involved six vehicles, and three of them resulted in an unknown number of injuries. Damages were estimated to exceed \$100,000. (NCDC, 2010).

July 2009, scattered thunderstorms moved slowly across the south central deserts and resulted in heavy rains and locally damaging winds. About 25 homes on the Gila River Indian Community sustained wind damage with many trees uprooted. Power poles were blown down at Highway 587 and Sesame Street. Four persons suffered minor injuries. Damages were estimated to exceed \$250,000. (NCDC, 2010).

August 2007, about 11 power poles were destroyed along the west side of Arizona Boulevard on the edge of the Casa Grande Ruins National Monument in Coolidge. About 2,300 households and businesses lost power for more than 40 hours and phone service was disrupted. Winds also uprooted trees in the area. The Red Cross estimated that more than 340 people received assistance in the form of food, water and shelter since a cooling station was established at the high school. Additional damage was reported in other areas of the County. Damages were estimated to exceed \$200,000. (NCDC, 2010).

August 2007, about 90 mobile homes were damaged or destroyed at Las Casitas trailer park. One third of them were blown off their foundations. About 150 people evacuated due to damage and numerous gas leaks. Unknown number of people had minor injuries. Numerous trees were blown down and about a mile-long stretch of power poles were damaged. This same storm caused similar damages in Casa Grande and Arizona City. Damages were estimated to exceed \$5 million. (NCDC, 2010).

July 2007, a dust storm along Interstate 10 in Eloy caused a series of accidents involving 11 vehicles. Scattered thunderstorms caused strong winds and flash flooding across Eastern Pima County and the Tohono O'odham Nation. Outflow winds from these thunderstorms also caused a dust storm in Southeast Pinal County. Damages were estimated to exceed \$50,000. (NCDC, 2010).

August 2006, severe thunderstorm winds estimated at over 50 mph blew down trees and took down power lines. Damages were estimated to exceed \$100,000. (NCDC, 2010).

Probability and Magnitude

Most severe wind events are associated with thunderstorms as previously mentioned. The probability of a severe thunderstorm occurring with high velocity winds increases as the average duration and number of thunderstorm events increases. The NWS issues a severe thunderstorm watch when conditions are favorable for the development of severe thunderstorms. The local NWS office considers a thunderstorm severe if it produces hail at least 3/4-inch in diameter, wind of 58 mph or higher, or tornadoes.

When a watch is issued for a region, residents are encouraged to continue normal activities but should remain alert for signs of approaching storms, and continue to listen for weather forecasts and statements from the local NWS office. When a severe thunderstorm has been detected by weather radar or one has been reported by trained storm spotters, the local NWS office will issue a severe thunderstorm warning. A severe thunderstorm warning is an urgent message to the affected counties that a severe thunderstorm is imminent. The warning time provided by a severe thunderstorm watch may be on the order of hours, while a severe thunderstorm warning typically provides an hour or less warning time.

Based on the historic record, the probability of tornados occurring in Pinal County is limited. Tornado damage severity is measured by the Fujita Tornado Scale, which assigns a numerical value of 0 to 5 based on wind speeds with the letter F preceding the number (e.g., FO, F1, F2). Most tornadoes last less than 30 minutes, but some last for over an hour. The path of a tornado can range from a few hundred feet to miles. The width of a tornado may range from tens of yards to more than a quarter of a mile.

Vulnerability

The countywide average CPRI for severe wind is 2.8 with over half of the jurisdictions evaluated received a likely to highly likely probability. Forty percent of the evaluated areas were listed as critical in severity receiving an individual CPRI rating of 3.4 and above.

The entire County is assumed to be equally exposed to the damage risks associated with severe winds. Typically, incidents are fairly localized and damages associated with individual events are relatively small. Based on the historic record, it is feasible to expect average annual county-wide losses of \$1.0 to \$1.5 million. It is difficult to estimate losses for individual jurisdictions within the County due to the lack of concrete data.

The Planning Team has determined that beginning with this Plan, they will continue to assess vulnerability as an overview summary of the hazard's impact on the community and its vulnerable structures, rather than in a quantitative manner.

Apache Junction – The Town has a high number of manufactured homes as well as older home which are more susceptible to damage from wind events.

Casa Grande, Coolidge, and Eloy – Similar to the potential effects of drought, transportation issues are of concern in this area due to its close proximity to the major transportation corridors.

Florence – Wind events are of particular concern, as Florence is the County seat and has a large number of critical facilities, infrastructure, and services that could be potentially damaged. Damage or destruction of these systems could have a serious effect of the entire county.

Kearny – Many older and manufactured homes in this area are highly susceptible to property damage due to wind events.

Maricopa – The area has a large agricultural sector and can be damaged from wind events resulting in economic loss for both businesses and individuals.

Superior – Due to the elevated geographic area and that most of the homes are very old and some are built on hillsides the area is highly susceptible to damage due to wind events. There is also potential health hazard impacts due to mine chemicals and tailings.

2. Scope of Work: Describe, in detail, the proposed project. Explain how the proposed project will solve the problem(s) and provide the level(s) of protection. Include a description of the desired outcome and methodology of the mitigation activity in terms of mitigation objectives to be achieved.

Under the Landscape Alternatives project, Pinal County will contract with a consultant to conduct research and create a plan for landscaping alternatives to be used in reducing wind velocity in high-risk areas of the county. The plan will identify the most critical and effective locations for the installation of the landscaping alternatives, landscaping options, and challenges as a result of the recommendations. Once implemented, the plan will reduce or eliminate damage to infrastructure, buildings, homes, and save lives. The high-risk areas were identified in the 2016 Hazard Mitigation Plan and the recently completed Dust Storm Warning project completed by the National Weather Service and the Arizona Department of Transportation.

Each project identified in the hazard mitigation plan must address the county's hazard mitigation goal and objectives.

GOAL: Reduce or eliminate the risk to people and property from natural hazards.

Objective 1: Reduce or eliminate risks that threaten life and property within Pinal County as demonstrated by the successful completion of the plan and actionable steps for implementation locally and through policy change on the county and local levels.

Objective 2: Reduce risk to critical facilities and infrastructure from impacts of hazards within Pinal County as demonstrated by the successful completion of the plan and actionable steps for implementation locally and through policy change on the county and local levels.

Objective 3: Promote hazard mitigation throughout Pinal County as demonstrated by the inclusion of actionable steps all stakeholders, including individuals, HOAs, and businesses can implement to reduce the effects of wind velocity within their respective areas.

Objective 4: Increase public awareness of hazards and risks within Pinal County as demonstrated by the inclusion of actionable steps all stakeholders, including individuals, HOAs, and businesses can implement to reduce the effects of wind velocity within their respective areas.

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Pinal_County_MJHMP_2016.pdf

File Upload 2

Waters_Accident_Analysis.pdf

1. Alternate Solutions: List the titles of three (3) Alternative Solutions for this project (one of which may be "No Alternative").

3.a Alternate Solution #1

A plan is completed resulting in no actionable recommendations to implement.

3.b Alternate Solution #2

A formal plan is not completed, but staff conducts a simple analysis without actionable recommendations.

3.c Alternate Solution #3

Do nothing

4. Provide the Latitude and Longitude of the project location. List the coordinates of the project. If the project is for a large area, provide the coordinates for each "corner" of the project's area.

The project location is considered the entire county. NW corner of the county 33.277859 -112.199730, SW corner 32.509891 -112.196983, SE corner 32.528418 -110.455650, NE corner 33.197456 -110.455650, NE center 33.465944 -111.037926, NW center 33.477400 -111.598228.

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CitiesTownsCommunities_11x17_20120821_ljt.pdf

1. Population Affected: Provide the number of each type of structure (listed below) in the project area. Include all structures in project area.

5.a Residential Properties

181,388

5.b Business/Commercial Properties

3,730

5.c Public Buildings

206

5.d Schools/House of Worship

155

5.e Critical Facilities/Infrastructure

311

Cost Share

For FMA: Federal Share: 75% / Non-Federal Share: 25% of total project costs. Federal Share: 90% / Non-Federal Share: 10% of total project costs. (NFIP Repetitive Loss) Federal Share: 100% / Non-Federal Share: 0% of total project costs. (NFIP Severe Repetitive Loss Bi or Bii)

1. Proposed Project Cost:

\$85,000.00

Federal Share (up to 75%)

63750

Non-Federal Share (up to 25%)

21250

Non-Federal Funding Share (25% of Total Cost) Source

List all sources and amounts utilized in the non-federal share including all in-kind services. In-kind services may not exceed the 25% non-federal share. If any portion of the non-Federal share will come from a non-applicant source (donated services, private donation, etc.), attach letters of funding commitment for each non-applicant source.

How many Source's do you have?

0 - Self Funding Remaining Amount

Total Non-Federal Funding Source Amount

0

Budget

In this section, provide the details of all the costs of the project that are applicable. For estimates, reasonable projections are essential.

1. Estimated Cost for Acquisition

\$0.00

2. Estimated Cost for Demolition

\$0.00

3. Estimated Force Account Labor Cost

\$0.00

4. Estimated Force Account Equipment Costs

\$0.00

5. Estimated Sub-Applicant Management Costs (no more than 5% of total project costs)

\$0.00

6. Estimated Contract Costs

\$85,000.00

7. Estimated Permits/Licensing Costs

\$0.00

8. Estimated Legal Costs

\$0.00

9. Estimated Other Costs

\$0.00

Total Estimated Project Costs85000

Project / Plan Overview**1. Does the proposal reduce the threat to multiple communities?**

Yes

2. Does the proposal reduce the risk to life safety?

Yes

3. Does the proposal reduce the risk to property damage?

Yes

**4. Will additional supporting documentation be submitted separately from this NOI?
(Not Required)**

No

5. For a construction project, does the proposal meet, at a minimum, a 1.0 BCA?

Not Applicable

**6. Will the proposal be completed within the allowed (3) year Period of
Performance?**Yes

BRIC Specific Questions**1. Does this proposal protect infrastructure?**

Yes

2. Does this proposal mitigate risk to one or more FEMA lifelines?

Yes

3. Does this proposal incorporate nature based solutions?

Yes

4. Does the sub-applicant have a Building Code Effectiveness Grading Schedule (BCEGS)? Rating 1 of 5

Unknown

5. Was this proposal developed from a previous FEMA HMA Advance Assistance Award?

Yes

6. Does the proposal have an increased Non-Federal Cost Share (above 25%)?

No

7. Is the sub-applicant designated as a small, impoverished community? (as defined in BRIC Policy)

No

Enviornmental

1. Does this proposal involve significant Environmental, Historical, or Legal issues? If so, please list below.

No

Additional Information.

1. Additional comments related to this project?

If you have any questions or comments regarding this program, please contact
mitigation@azdema.gov