



THE STATE  
of **ALASKA**  
GOVERNOR SEAN PARNELL

Department of Military and  
Veterans Affairs

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October 31, 2014

Mr. Stanley Gimont  
Director, Office of Block Grant Assistance  
US Department of Housing and Urban Development  
451 7th Street S.W.  
Washington, DC 20410  
Submitted to: [ResilientRecovery@hud.gov](mailto:ResilientRecovery@hud.gov)

RE: Request for Response to "Most Impacted and Distressed" and "Unmet Needs" Thresholds

Dear Mr. Gimont:

I am pleased to submit this threshold request from the State of Alaska, authorized by the National Disaster Resilience Competition Notice of Funding Availability (NOFA). The State of Alaska seeks your determination as to whether the information we include below is sufficient to address the "Most Impacted and Distressed" and "Unmet Needs" thresholds defined in Appendix G to the NOFA. Please note that this submission exceeds the recommended five page limit, as the State of Alaska submits 16 communities for consideration.

Below we separately address each threshold requirement in Appendix G.

## 1. CITY OF ALAKANUK

### Most Impacted and Distressed Threshold

The target area identified as most impacted and distressed is the *City of Alakanuk* as a result of Presidentially-declared disaster DR-4122, which occurred in the eligible calendar year of 2013. The City of Alakanuk, in the Wade Hampton Census Area, is within the Lower Yukon Regional Education Attendance Area (REAA) declared a Qualified Disaster area.

The City of Alakanuk exhibits Most Impacted Characteristics and Most Distressed Characteristics which affect the ability of the area to recover from DR-4122.

### *Most Impacted Characteristics*

The City of Alakanuk meets the Most Impacted Characteristics of Infrastructure and Environmental Degradation.

The Federal Emergency Management Agency's (FEMA) permanent infrastructure damages in the City of Alakanuk from DR-4122 are estimated at \$4,649,685.62 based on FEMA project worksheets (PWs), categories C through G. The disaster damages from DR-4122 exceed the \$2M threshold requirement.

## DR-4122 City of Alakanuk FEMA Project Worksheets

PW #	Location	Project names	Cost
PA-10-AK-4122-PW-00043(0)	ALAKANUK	TEP002C Citywide Road Repair-Multiple Sites	\$1,408,747.33
PA-10-AK-4122-PW-00069(0)	ALAKANUK	PJB014G Mooring Point	\$242,207.46
PA-10-AK-4122-PW-00030(0)	ALAKANUK	JAC002E Destroyed Vehicle	\$9,323.28
PA-10-AK-4122-PW-00077(0)	ALAKANUK	PJB011F Alakanuk Arctic Pipe	\$2,897,035.85
PA-10-AK-4122-PW-00072(0)	ALAKANUK	PJB012F Alakanuk Utilities	\$24,731.02
PA-10-AK-4122-PW-00041(0)	ALAKANUK	JAC007E - Damaged Tribal Hall and Offices Building	\$13,391.49
PA-10-AK-4122-PW-00035(0)	ALAKANUK	JAC006E Damaged Equipment	\$5,745.56
PA-10-AK-4122-PW-00025(0)	ALAKANUK	TEP003G Cemetery / Playground / Walkway	\$13,686.01
PA-10-AK-4122-PW-00080(0)	ALAKANUK	TEP009E Alakanuk City Buildings	\$34,817.62
Total PWs: 9		Total Cost:	\$4,649,685.62

The City of Alakanuk also suffers from environmental degradation due to riverine erosion. During the qualified disaster event, DR-4122, the City of Alakanuk suffered from inundation and ballistic ice damage due to severe ice jams and high flows from the Yukon River.

The USACE Community Erosion Assessment, Alakanuk, Alaska, 27 January 2009, ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Alakanuk\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Alakanuk_Final%20Report.pdf)) notes areas impacted by DR-4122 are subject to erosion along the Alakanuk Pass embankment. According to the assessment, an identified damage area for DR-4122, Reach 4, which includes the Tribal Office Building, is eroding at a rate of 7.8 feet/year. The Tribal Halls and Offices building was damaged during the event. High flow water and ballistic ice displaced timber, pilings causing damages in the amount of \$13,391.49 (PW 41). Although no 406 mitigation opportunities were identified for this structure, the City of Alakanuk submitted a HMGP flood and erosion mitigation project application to the State of Alaska, identifying a \$348,351.00 project to relocate the Tribal Halls and Office Building in August of 2012. The project application assessed that structure was 58 feet from the embankment at that time.

The fuel storage area also sustained damage from the DR-4122 event. Inundation of flood waters caused two 10,000 gallon fuel storage tanks to become buoyant and displaced, and the water plant pump and electrical system were damaged (PW 72) in the amount of \$23,187. Proposed mitigation in the PW included anchoring of the fuel tanks. Despite the repair work from the DR-4122 event, it is notable that the fuel tanks are located within the 50-year erosion profile (USACE Assessment). These two examples demonstrate that erosion in Alakanuk places housing, infrastructure, and/or economic revitalization at risk, and continues to place the population, infrastructure, and environment at risk from future disasters.

In response to a request from Department of Homeland Security (DHS)/FEMA, the State of Alaska Department of Natural Resources(DNR)/Division of Geological and Geophysical Surveys (DGGS) Coastal Hazards Geologist conducted a net erosion calculation associated with the November 2013 storm (qualifying event DR-4162) along the old runway/evacuation route in Shaktoolik (qualifying target area). The report quantified the net shoreline retreat along the old runway/evacuation route in meters of shoreline lost inland in some vertical transects and area lost. See Most Impacted Section under Target Community Shaktoolik (10 of 16) for Shaktoolik analysis results. The State of Alaska CDBG-DR Interagency Working Group has requested a similar analysis for DR-4122 for Alakanuk.

### ***Most Distressed Characteristics***

The City of Alakanuk meets the Most Distressed Characteristics of: Disaster impacted low- and moderate-income households, Disaster impacted an economically fragile area, and Disaster impacted an area with prior documented environmental distress.

Reference [www.HUDUSER.org/CBDGRDR/AppendixD](http://www.HUDUSER.org/CBDGRDR/AppendixD), the City of Alakanuk meets the Disaster impacted low-and moderate-income threshold (73% low mod percentage).

The City of Alakanuk is the area inhabited by members of the federally-recognized tribe the Native Village of Alakanuk. Additionally, the City of Alakanuk is located in the Wade Hampton Census Area, with an unemployment rate of 23% (August 2014), well above 125% of the national average employment rate of 6.1% (August 2014).

Per the Alaska Department of Environmental Conservation (DEC) Contaminated Sites Program (<http://dec.alaska.gov/applications/spar/CSPSearch/results.asp>), the City of Alakanuk has one Cleanup Complete site and one Open site.

The USACE Alaska Baseline Erosion Assessment, March 2009 (<http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/AlaskaBaselineErosionAssessmentBEAMainReport.pdf>), identified Alakanuk as one of 26 “Priority Action Communities” facing imminent threat from flooding and erosion.

Alakanuk has also been identified by the Imperiled Community Water Resources Analysis ([http://www.climatechange.alaska.gov/docs/iaw\\_tt\\_imperiled\\_h2o\\_30jun10.pdf](http://www.climatechange.alaska.gov/docs/iaw_tt_imperiled_h2o_30jun10.pdf)) as a community likely to experience “near term climate change impacts to their water and wastewater infrastructure.”

### **Unmet Recovery Needs Threshold**

The City of Alakanuk has Unmet Recovery Needs, meaning needs that have not been addressed by federal, state, or other sources, in the area(s) identified in this letter as “most impacted and distressed.”

The City of Alakanuk has not had a previous allocation of CDBG Disaster Recovery funds in response to major disasters in 2011, 2012, or 2013. The City meets the Unmet Needs criteria category of Environmental Degradation.

The City of Alakanuk has unmet needs due to environmental degradation from erosion. Environmental degradation due to erosion places housing, infrastructure, and economic revitalization at risk. Unmet needs include the following projects, which are unfunded.

- City of Alakanuk, Native Village of Alakanuk Tribal Office Relocation, \$348,351, HMGP project application (State of Alaska)
- City of Alakanuk, 3 Residential Structure relocation and Elevation Project, \$443,829, HMGP project application (State of Alaska)
- The State of Alaska, Division of Homeland Security & Emergency Management (DHS&EM) estimates \$50K to \$100K required for technical assistance to develop project applications for the following identified but unquantified mitigation projects. The USACE Community Erosion Assessment and the City of Alakanuk's 2013 FEMA-approved hazard mitigation plan (<http://commerce.state.ak.us/DNN/Portals/4/Repository/Plans/Alakanuk%20LHMP%202013.pdf>) identify general projects such as technical analysis/study of effective embankment protection; additional commercial, privately-owned, and public structure relocation and elevation; and mitigation measures for infrastructure and utilities such as roads, barge landings, sewer lines, boardwalks, power and phone lines, and fuel storage tanks. The USACE Erosion Assessment states Alakanuk has \$30.2M of infrastructure at risk from erosion.
- According to the USACE Assessment, erosion of land fuel tanks could cause an environmental hazard situation as potentially contaminated soils could impact the local ecosystem and fish stocks. The Assessment estimates decommission and closure of such facilities could cost \$1,834,000.
- The USACE Assessment identifies a 6,000-foot long rip rap revetment at the scour hole in Alakanuk Pass as a potential solution (mitigation action) to protect community infrastructure, at a cost of \$57.8M.

The above-listed Unmet Needs exceeds the \$400K minimum threshold.

## 2. CITY OF KOTLIK

### **Most Impacted and Distressed Threshold**

The target area identified as most impacted and distressed is the *City of Kotlik* as a result of Presidentially-declared disasters DR-4050, which occurred in the eligible calendar year of 2011, and DR-4162, which occurred in the eligible calendar year of 2013. The City of Kotlik, in the Wade Hampton Census Area, is within the Lower Yukon Regional Education Attendance Area (REAA) declared a Qualified Disaster area.

The City of Kotlik exhibits Most Impacted Characteristics and Most Distressed Characteristics which affect the ability of the area to recover from DR-4050 and DR-4162.

### ***Most Impacted Characteristics***

The City of Kotlik meets the Most Impacted Characteristics of Infrastructure and Environmental Degradation.

The FEMA permanent infrastructure damages in the City of Kotlik from DR-4050 and DR-4162 are estimated at \$229,691.29 and \$4,319,459.94 based on FEMA PWs, categories C through G. The disaster damages from DR-4162 exceed the \$2M threshold requirement.

## DR-4050 City of Kotlik FEMA Project Worksheets

PW #	Location	Project names	Cost
PA-10-AK-4050-PW-00055(1)	KOTLIK	KOTC-E3 Teen Center Foundation	\$39,927.75
PA-10-AK-4050-PW-00080(0)	KOTLIK	KOTC-E4 City Storage Shed Contents	\$5,057.84
PA-10-AK-4050-PW-00039(1)	KOTLIK	KOTC-E1 City Hall Building	\$1,482.78
PA-10-AK-4050-PW-00032(1)	KOTLIK	KOTC-C1 Pedestrian Boardwalk	\$5,802.17
PA-10-AK-4050-PW-00058(1)	KOTLIK	KOTC-E2 City Shop (Contents captured separately)	\$177,420.75
Total PWs: 5		Total Cost:	\$229,691.29

## DR 4161 City of Kotlik FEMA Project Worksheets

PW #	Location	Project names	Cost
PA-10-AK-4162-PW-00046(0)	KOTLIK	KLA028C - Barge Loading Dock	165,146.80
PA-10-AK-4162-PW-00018(1)	KOTLIK	KLA009F Honey Pot Basin Destroyed	5,068.34
PA-10-AK-4162-PW-00019(0)	KOTLIK	KLA002F - Damaged Utilidor	3,744,938.50
PA-10-AK-4162-PW-00049(0)	KOTLIK	KLA008E Dump Burners, Tents,& Fence	404,305.80
Total PWs: 4		Total Cost:	\$4,319,459.44

The City of Kotlik also suffers from environmental degradation due to riverine erosion.

The USACE Alaska Baseline Erosion Assessment, Kotlik, Alaska, 7 March 2008 ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Kotlik\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Kotlik_Final%20Report.pdf)), describes a 600 foot area of failing erosion protection: an armorflex concrete matting installed in 1986 funded by a State legislative grant. The USACE Erosion Assessment noted that area of protection was failing.

In response to a request from Department of Homeland Security (DHS)/FEMA, the State of Alaska Department of Natural Resources (DNR)/Division of Geological and Geophysical Surveys (DGGS) Coastal Hazards Geologist conducted a net erosion calculation associated with the November 2013 storm (qualifying event DR-4162) along the old runway/evacuation route in Shaktoolik (qualifying target area). The report quantified the net shoreline retreat along the old runway/evacuation route in meters of shoreline lost inland in some vertical transects and area lost. See Most Impacted Section under Target Community Shaktoolik (10 of 16) for Shaktoolik analysis results. The State of Alaska CDBG-DR Interagency Working Group has requested a similar analysis for DR-4050 and DR-4162 for Kotlik.

Ongoing erosion in the City of Kotlik places housing, infrastructure, and/or economic revitalization at risk.

### ***Most Distressed Characteristics***

The City of Kotlik meets the Most Distressed Characteristics of: Disaster impacted low- and moderate-income households; Disaster impacted an economically fragile area; and Disaster impacted an area with prior documented environmental distress.

Reference [www.HUDUSER.org/CBDGRDR/AppendixD](http://www.HUDUSER.org/CBDGRDR/AppendixD), the City of Kotlik meets the Disaster impacted low-and moderate-income threshold (81% low mod percentage).

The City of Kotlik is the area inhabited by members of the federally-recognized tribe the Native Village of Kotlik. Additionally, the City of Kotlik is located in the Wade Hampton Census Area, with an unemployment rate of 23% (August 2014), well above 125% of the national average employment rate of 6.1% (August 2014).

Per the Alaska Department of Environmental Conservation (DEC) Contaminated Sites Program (<http://dec.alaska.gov/applications/spar/CSPSearch/results.asp>), the City of Kotlik has one Cleanup Complete site and four Open sites.

The USACE Alaska Baseline Erosion Assessment, March 2009 (<http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/AlaskaBaselineErosionAssessmentBEAMainReport.pdf>) identified Kotlik as one of 26 “Priority Action Communities” facing imminent threat from flooding and erosion.

### **Unmet Recovery Needs Threshold**

The City of Kotlik has Unmet Recovery Needs, meaning needs that have not been addressed by federal, state, or other sources, in the area(s) identified in this letter as “most impacted and distressed.” The City of Kotlik has not had a previous allocation of CDBG Disaster Recovery funds in response to major disasters in 2011, 2012, or 2013.

The City meets the Unmet Needs criteria category of Infrastructure and Environmental Degradation. During the qualified disaster event DR-4162, the City of Kotlik suffered from inundation by high water, ice, and woody debris due to severe storms, straightline winds, and flooding. The City’s water/waste water system was significantly damaged, impacting the raw water intake system, sewer main force system, home and sewer services, and the Loop 3 Utilidor (PW 19). Mitigation actions included the use of helical screw piles to support the water and sewer mains in the damaged portions of the utilidor. The City of Kotlik’s utility maintenance and operations service, Alaska Native Tribal Health Consortium (ANTHC), indicated a desire to mitigate the undamaged portion of the utilidor at an unspecified cost to prevent damages from future events (unmitigated infrastructure).

The City of Kotlik has unmet needs due to environmental degradation from erosion. Environmental degradation due to erosion places housing, infrastructure, and economic revitalization at risk. Unmet needs include the following projects, which are unfunded.

- City of Kotlik’s 2007 FEMA-approved hazard mitigation plan ([http://commerce.state.ak.us/DNN/Portals/4/Repository/Plans/Kotlik\\_HMP.pdf](http://commerce.state.ak.us/DNN/Portals/4/Repository/Plans/Kotlik_HMP.pdf)) identifies up to 77 residential structure relocation and elevations. State of Alaska DHS&EM estimates relocations and elevations in rural, remote Alaska communities at \$150K-250K per structure,

depending upon the size, complexity, and condition of the structure. Estimated total project cost is \$11,550,000-\$19,250,000.

- Critical facilities at risk from erosion include the AC Store, Head Start Pre-School, City Office, and Municipal Landfill. Additionally, there are 5 non-critical facilities in the community at risk from erosion. No cost estimate is available.
- The State of Alaska DHS&EM estimates \$50K to \$100K required for technical assistance to develop project applications.

The above-listed Unmet Needs exceeds the \$400K minimum threshold.

### 3. CITY OF GALENA

#### **Most Impacted and Distressed Threshold**

The target area identified as most impacted and distressed is the *City of Galena* as a result of the Presidentially-declared disaster DR-4122, which occurred in the eligible calendar year of 2013. The City of Galena is in the Yukon-Koyukuk Regional Education Attendance Area (REAA), which was declared a Qualified Disaster area.

The City of Galena exhibits Most Impacted Characteristics and Most Distressed Characteristics which affect the ability of the area to recover from DR-4122.

#### ***Most Impacted Characteristics***

The City of Galena meets the Most Impacted Characteristics of Housing, Infrastructure, and Environmental Degradation. 82 privately-owned homes met FEMA verified loss values of over \$8,000 (HUD's definition of serious damage) in Galena from the qualifying event, exceeding the minimum threshold criteria of "serious damages to a minimum of 20 homes."

The FEMA permanent infrastructure damages in the City of Galena from DR-4122 are estimated at \$3,141,431.29 based on 20 FEMA PWs, categories C through G, exceeding the \$2M threshold requirement.

#### **DR-4122 City of Galena FEMA Project Worksheets**

PW #	Location	Project names	Cost
PA-10-AK-4122-PW-00001(1)	GALENA	ELH011G - Baseball field	\$52,108.79
PA-10-AK-4122-PW-00028(2)	GALENA	JDP002F Power Generation Plant	\$125,769.67
PA-10-AK-4122-PW-00097(0)	GALENA	JDP010F Water/Wastewater System	\$1,276,736.43
PA-10-AK-4122-PW-00017(1)	GALENA	ELH016C Galena Public Roads	\$135,673.27
PA-10-AK-4122-PW-00094(0)	GALENA	JDP003F Fuel Tanks	\$3,541.56
PA-10-AK-4122-PW-00027(0)	GALENA	ELH020F Waste Water Lagoons/Cells	\$26,383.55
PA-10-AK-4122-PW-00036(1)	GALENA	ELH001E City Hall and Clinic	\$2,733.66

PA-10-AK-4122-PW-00045(1)	GALENA	JDP007F Switchgear	\$5,186.61
PA-10-AK-4122-PW-00010(1)	GALENA	ELH015E City of Galena	\$36,385.80
PA-10-AK-4122-PW-00031(1)	GALENA	ELH019F Secondary Power Generation Facilities	\$164,924.39
PA-10-AK-4122-PW-00092(0)	GALENA	JPP024E Building Contents	\$559.76
PA-10-AK-4122-PW-00093(0)	GALENA	JDP006B Emergency Dewatering of Non-Natural Lakes	\$73,111.40
PA-10-AK-4122-PW-00005(2)	GALENA	ELH010E Fire Dept. Building	\$8,022.04
PA-10-AK-4122-PW-00037(0)	GALENA	JDP001F Power Distribution System	\$529,779.87
PA-10-AK-4122-PW-00011(2)	GALENA	ELH002E Galena DPW Building	\$1,475.11
PA-10-AK-4122-PW-00008(1)	GALENA	ELH017C 1st Ave. Public Road	\$21,584.38
PA-10-AK-4122-PW-00047(1)	GALENA	JDP008F Heat Transfer System	\$461,851.01
PA-10-AK-4122-PW-00042(1)	GALENA	ELH012E - Galena Pool House	\$2,621.55
PA-10-AK-4122-PW-00105(0)	GALENA	JDP014F - Power Distribution at Alexander Lake	\$142,546.86
PA-10-AK-4122-PW-00024(1)	GALENA	ELH014E City Vehicles	\$70,435.58
# PWs: 20			\$3,141,431.29

The City of Galena also suffers from environmental degradation due to riverine erosion. During the qualifying event, the flood almost overtopped the levee. In response to a FEMA-State Joint Field Office (JFO) mission assignment, the USACE conducted a field study to assess the condition of the levee. The resulting Galena Airport Levee Inspection and Geotechnical Assessment recommended that portions of the levee be protected using armor rock and/or articulated concrete matting. The estimated project cost is \$5M-10M.

In response to the qualifying event, the National Resource Conservation Service (NRCS) conducted a Damage Survey Report (DSR) to assess eligibility under their Emergency Watershed Protection (EWP) Program-Recovery. The DSR concluded that damage caused by ice jams (erosion) associated with the qualifying event was eligible under their programs. The DSR estimated a construction project cost of \$9M with a net community benefit of \$66.7M.

As a result of the qualifying event, the Federal Coordinating Officer applied an E.O. 11988 Flood Plain determination on “Old Town” Galena, not allowing federal investment in the area. The “Old Town” area of Galena lies along the banks of the Yukon River, riverside of the ring levee protecting the old airbase and runway.

Additionally, the official Galena Flood Insurance Study (FIS) indicated that the base flood elevation (BFE) in City of Galena is 131.5 feet. The FEMA/NFIP-recommended local elevation requirement is



two feet above BFE, or 133.5 feet. Based on high water marks measured and recorded by the USACE and NWS immediately after the event, FEMA Region X recommended a flood recovery elevation (FRE) of 135.5 feet. Any federally funded projects were required to elevate to at least the FRE. The updated (best available) data and FEMA/State funding decisions that resulted from this event indicate significant environmental degradation placing housing, infrastructure, and/or economic revitalization at risk.

In response to a request from Department of Homeland Security (DHS)/FEMA, the State of Alaska Department of Natural Resources(DNR)/Division of Geological and Geophysical Surveys (DGGS) Coastal Hazards Geologist conducted a net erosion calculation associated with the November 2013 storm (qualifying event DR-4162) along the old runway/evacuation route in Shaktoolik (qualifying target area). The report quantified the net shoreline retreat along the old runway/evacuation route in meters of shoreline lost inland in some vertical transects and area lost. See Most Impacted Section under Target Community Shaktoolik (10 of 16) for Shaktoolik analysis results. The State of Alaska CDBG-DR Interagency Working Group has requested a similar analysis for DR-4122 for Galena.

### ***Most Distressed Characteristics***

The City of Galena meets the Most Distressed Characteristics of: Disaster impacted an economically fragile area; and Disaster impacted an area with prior documented environmental distress.

The City of Galena is the area inhabited by members of the federally-recognized tribe Galena Village, whose governing body is the Loudon Tribal Council. Additionally, the City is located in the Yukon-Koyukuk Census Area, with an unemployment rate of 13% (August 2014), well above 125% of the national average employment rate of 6.1% (August 2014).

Per the Alaska Department of Environmental Conservation (DEC) Contaminated Sites Program (<http://dec.alaska.gov/applications/spar/CSPSearch/results.asp>), the City of Galena has 21 Cleanup Complete sites and 60 Open sites.

The USACE Erosion Information Paper, Galena, Alaska, December 5, 2007 ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Galena\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Galena_Final%20Report.pdf)), states erosion is a concern in this community. The Erosion Information Paper cites a 300-400ft area of erosion on Campion Road, 1.5 miles past “New” Town, along the Yukon River.

### **Unmet Recovery Needs Threshold**

The City of Galena has Unmet Recovery Needs, meaning needs that have not been addressed by federal, state, or other sources, in the area(s) identified in this letter as “most impacted and distressed.” The City of Galena has not had a previous allocation of CDBG Disaster Recovery funds in response to major disasters in 2011, 2012, or 2013.

The City also meets the Unmet Needs criteria category of Environmental Degradation. During the qualifying disaster event DR-4122, the area suffered from inundation by high water, ballistic ice, and woody debris due to flooding. Much of the City’s infrastructure was damaged but funded for repair and 406 mitigation under FEMA PWs. Fifty-one eligible residential structures were funded for elevation to one foot above the FRE under FEMA/State funding-Hazard Mitigation Grant Program (HMGP) and State Disaster Recovery funds. Despite the commitment of \$3,070,995.71 in

FEMA repair and mitigation (406) funding, and approximately \$8M of State Disaster Recovery and FEMA HMGP funds, unmet needs remain in mitigation projects (infrastructure and residential).

The City of Galena has unmet infrastructure needs due to environmental degradation from erosion. Environmental degradation due to erosion places housing, infrastructure, and economic revitalization at risk. Unmet needs include the following unfunded projects:

- The Loudon Tribal Council identified up to 9 additional residential structure relocations in mitigation project applications to DHS&EM. Recent (2014) elevation project costs in Galena indicate an average estimated elevation cost of \$160K per structure, depending upon the size, complexity, and condition of the structure. Estimated total project cost is \$1.44M.
- The Loudon Tribal Council identified two applicants for property acquisition and demolition projects, totaling an estimated \$600K.
- The City of Galena submitted a mitigation grant application for elevation of the University of Alaska Fairbanks (UAF) building, the Childhood Center, City Hall, Community Hall, and Utility Center, totaling \$860K.
- The Loudon Tribal Council LHMP (draft) indicates \$9M value of residential structures and \$51.6M of community facilities are at risk due to erosion with another \$78M in residential structures and \$238M of community structures at risk due to flooding. The City of Galena and Loudon Tribal Council LHMPs identify general project types but do not details specific projects with estimated costs. See following item.
- The State of Alaska, DHS&EM estimates \$50K to \$100K required for technical assistance to develop project applications.

The above-listed Unmet Needs exceeds the \$400K minimum threshold.

#### **4. COMMUNITY OF NEWTOK**

##### **Most Impacted and Distressed Threshold**

The target area identified as most impacted and distressed is the *Community of Newtok* as a result of the Presidentially-declared disaster DR-4162, which occurred in the eligible calendar year of 2013. Newtok is an unincorporated community in the Bethel Census Area, which was declared a Qualified Disaster area.

Newtok exhibits Most Impacted Characteristics and Most Distressed Characteristics which affect the ability of the area to recover from DR-4162.

##### ***Most Impacted Characteristics***

Newtok meets the Most Impacted Characteristics of Infrastructure and Environmental Degradation.

During the qualifying event, Newtok sustained FEMA Category C-G damage to infrastructure.

##### **DR-4162 Newtok FEMA Project Worksheets**

PW #	Location	Project names	Cost
PA-10-AK-4162-PW-00051	NEWTOK	Dock repair at 4 sites	\$304,431.00

PA-10-AK-4162-PW-00048	NEWTOK	Boardwalk repairs at 5 locations	\$689,040.44
PA-10-AK-4162-PW-00037	NEWTOK	Fence at Dump Site	\$88,638.00
# PWs: 3			\$1,082,109.44

Additionally, the State of Alaska obligated a State funded project worksheet of \$100K to repair the local washeteria.

This is significant impact to community infrastructure for a remote, tribal, poor and impoverished, subsistence-based community in Alaska. Despite not meeting the \$2M FEMA Infrastructure damage threshold, the State of Alaska submits the extent of these damages meets the intent of the “Most Impacted Infrastructure” threshold. See Newtok Community Profile data at <http://commerce.state.ak.us/cra/DCRAExternal/community/Details/272a57f6-7fcd-4399-baf2-123e4a420e93>.

Newtok suffers from environmental degradation due to riverine erosion.

In response to the qualifying event, the National Resource Conservation Service (NRCS) conducted a Damage Survey Report (DSR) in September of 2014 to assess eligibility under their Emergency Watershed Protection (EWP) Program-Recovery. The DSR assessed that damage was caused by ongoing streambank erosion problems, and with a past erosion rate of 40-60LF/year, the closest structures would be at risk in 3-5 years.

The USACE Baseline Erosion Assessment, AVETA Report Summary – Newtok, Alaska ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Newtok\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Newtok_Final%20Report.pdf)) notes that Newtok suffers from erosion along the Ninglick River. The erosion rate is reported to range from 42 to 113 feet per year with major utilities, infrastructure, residences, and economic revitalization at risk.

In response to a request from Department of Homeland Security (DHS)/FEMA, the State of Alaska Department of Natural Resources(DNR)/Division of Geological and Geophysical Surveys (DGGS) Coastal Hazards Geologist conducted a net erosion calculation associated with the November 2013 storm (qualifying event DR-4162) along the old runway/evacuation route in Shaktoolik (qualifying target area). The report quantified the net shoreline retreat along the old runway/evacuation route in meters of shoreline lost inland in some vertical transects and area lost. See Most Impacted Section under Target Community Shaktoolik (10 of 16) for Shaktoolik analysis results. The State of Alaska CDBG-DR Interagency Working Group has requested a similar analysis for DR-4162 for Newtok.

### ***Most Distressed Characteristics***

Newtok meets the Most Distressed Characteristics of: Disaster impacted low- and moderate-income households; Disaster impacted an economically fragile area; and Disaster impacted an area with prior documented environmental distress.

Referencing [www.HUDUSER.org/CBDGRDR/AppendixD](http://www.HUDUSER.org/CBDGRDR/AppendixD), Newtok meets the disaster impacted low-and moderate-income threshold (72% low mod percentage).

Newtok is the area inhabited by members of the federally-recognized tribe Newtok Village, whose governing body is the Newtok Village Council. Additionally, the village is located in the Bethel

Census Area, with an unemployment rate of 16% (August 2014), well above 125% of the national average employment rate of 6.1% (August 2104).

Per the Alaska Department of Environmental Conservation (DEC) Contaminated Sites Program (<http://dec.alaska.gov/applications/spar/CSPSearch/results.asp>), Newtok has one Cleanup Complete site and one Open site.

The USACE Alaska Baseline Erosion Assessment, March 2009 (<http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/AlaskaBaselineErosionAssessmentBEAMainReport.pdf>), identified Newtok as one of 26 “Priority Action Communities” facing imminent threat from flooding and erosion.

The GAO Report GAO-09-551, Alaska Native Villages, Limited Progress Has Been Made on Relocating Villages Threatened by Erosion and Flooding (<http://www.gao.gov/assets/300/290468.pdf>), identified Newtok as an imminently threatened village seeking to relocate. Floodwaters in the 2005 federally-declared disaster DR-1618 completely surrounded the village, cutting it off from fuel and supplies and destroying the barge landing.

An Environmental Public Health Assessment: Newtok Alaska, published in September 2006, reports that nearby potable water supplies are limited, possibly contaminated, and have been affected by flooding and erosion. Continued erosion of the Newtok River exacerbates the wastewater capacity issue, as erosion has cut off the flow of the Newtok River where raw sewage is dumped. The previous solid waste disposal site was also lost to erosion (per the 2006 report). Since then a new non-permitted Class II landfill has been established across the Newtok River from the village.

Newtok has also been identified as a “climate-induced relocation,” per Climate-Induced Community Relocations: Creating an Adaptive Governance Framework based in Human Rights, (<http://socialchangenyu.files.wordpress.com/2012/08/climate-induced-migration-bronen-35-2.pdf>).

National Climate Assessment: regions: Coasts: Climate-related Drivers of Coastal Change (<http://nca2014.globalchange.gov/report/regions/coasts#narrative-page-16832>) identifies Newtok as an Alaska Village susceptible to climate change and erosion accelerated by storms and flooding.

### **Unmet Recovery Needs Threshold**

Newtok has Unmet Recovery Needs, meaning needs that have not been addressed by federal, state, or other sources, in the area(s) identified in this letter as “most impacted and distressed.” Newtok has not had a previous allocation of CDBG Disaster Recovery funds in response to major disasters in 2011, 2012, or 2013.

Newtok meets the Unmet Needs criteria category of Environmental Degradation.

During the qualifying disaster event DR-4162, Newtok suffered from damage due to inundation by high water and high winds. The ongoing erosion issues which are exacerbated during disaster events place housing, infrastructure, and economic revitalization at risk.

The FEMA-approved 2008 Village of Newtok HMP ([http://commerce.state.ak.us/DNN/Portals/4/Repository/Plans/Newtok\\_HMP.pdf](http://commerce.state.ak.us/DNN/Portals/4/Repository/Plans/Newtok_HMP.pdf)) details the need for \$5.27M in planning, technical studies, and design and engineering projects.

The Alaska Baseline Erosion Assessment, AVETA report summary – Newtok, Alaska ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Newtok\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Newtok_Final%20Report.pdf)) found that erosion control efforts from 1983-1989 totaled almost \$1.5M, however the construction cost for new shoreline protection is estimated at \$90M. The USACE estimated the cost of future damages to residential, commercial, and public buildings at \$119M for the 50-year project horizon. The report estimates potential community relocation costs to Mertarvik to be \$125M.

In a 2014 mitigation project application development effort, DHS&EM estimated the cost to relocate 12 viable residences and acquire 4 other homes at a cost of \$4.1M. This currently unfunded mitigation project would relocate 16 families to Mertarvik. This project does not include the additional cost to move supporting infrastructure such as school, clinic, and utility services.

The Newtok Planning Group also produced the following planning documents:

Mertarvik (relocation site) Relocation Report

([http://commerce.alaska.gov/dnn/Portals/4/pub/Mertarvik\\_Relocation\\_Report\\_final.pdf](http://commerce.alaska.gov/dnn/Portals/4/pub/Mertarvik_Relocation_Report_final.pdf))

Mertarvik Strategic Management Plan

([http://commerce.alaska.gov/dnn/Portals/4/pub/Mertarvik\\_Strategic\\_Management\\_Plan.pdf](http://commerce.alaska.gov/dnn/Portals/4/pub/Mertarvik_Strategic_Management_Plan.pdf))

Mertarvik Strategic Management Plan Background Report

([http://commerce.alaska.gov/dnn/Portals/4/pub/Mertarvik\\_SMP\\_Background\\_Report\\_9-2012.pdf](http://commerce.alaska.gov/dnn/Portals/4/pub/Mertarvik_SMP_Background_Report_9-2012.pdf))

The State of Alaska, DHS&EM estimates \$50K to \$100K required for technical assistance to develop project applications.

The above-listed Unmet Needs exceeds the \$400K minimum threshold.

## **5. CITY OF SHISHMAREF**

### **Most Impacted and Distressed Threshold**

The target area identified as most impacted and distressed is the *City of Shishmaref* as a result of the Presidentially-declared disaster DR-4050, which occurred in the eligible calendar year of 2011. The City of Shishmaref, a second class city in the Nome Census Area, was declared a Qualified Disaster area.

The City of Shishmaref exhibits Most Impacted Characteristics and Most Distressed Characteristics which affect the ability of the area to recover from DR-4050.

### ***Most Impacted Characteristics***

The City of Shishmaref meets the Most Impacted Characteristic of Environmental Degradation.

The City of Shishmaref suffers from environmental degradation due to coastal erosion. The City of Shishmaref is identified by in the USACE Alaska Baseline Erosion Assessment, March 2009 ([http://www.climatechange.alaska.gov/docs/iaw\\_USACE\\_erosion\\_rpt.pdf](http://www.climatechange.alaska.gov/docs/iaw_USACE_erosion_rpt.pdf)), as a “Priority Action Community” where “erosion is threatening the viability of the community, significant resources are being expended to minimize such threats, or both conditions are present.”

The USACE Alaska Baseline Assessment states “coastal erosion [in Shishmaref] is aggravated by icepack production forming later in winter and melting earlier in spring” and that “protection measures have limited success.”

In response to a request from Department of Homeland Security (DHS)/FEMA, the State of Alaska Department of Natural Resources(DNR)/Division of Geological and Geophysical Surveys (DGGS) Coastal Hazards Geologist conducted a net erosion calculation associated with the November 2013 storm (qualifying event DR-4162) along the old runway/evacuation route in Shaktoolik (qualifying target area). The report quantified the net shoreline retreat along the old runway/evacuation route in meters of shoreline lost inland in some vertical transects and area lost. See Most Impacted Section under Target Community Shaktoolik (10 of 16) for Shaktoolik analysis results. The State of Alaska CDBG-DR Interagency Working Group has requested a similar analysis for DR-4050 for Shishmaref.

This report and others address how ongoing erosion issues in the City of Shishmaref, especially in conjunction with severe weather and flooding events, place housing, infrastructure, and/or economic revitalization at risk.

### ***Most Distressed Characteristics***

The City of Shishmaref meets the Most Distressed Characteristics of: Disaster impacted low- and moderate-income households; Disaster impacted an economically fragile area; and Disaster impacted an area with prior documented environmental distress.

Reference [www.HUDUSER.org/CBDGRDR/AppendixD](http://www.HUDUSER.org/CBDGRDR/AppendixD), the City of Shishmaref meets the Disaster impacted low-and moderate-income threshold (80% low mod percentage).

The City of Shishmaref is inhabited by members of the federally-recognized tribe the Native Village of Shishmaref. Additionally, the City of Shishmaref is located in the Nome Census Area, with an unemployment rate of 13% (August 2014), well above 125% of the national average employment rate of 6.1% (August 2014).

Per the Alaska Department of Environmental Conservation (DEC) Contaminated Sites Program (<http://dec.alaska.gov/applications/spar/CSPSearch/results.asp>), the City of Shishmaref has three Open cleanup sites.

The GAO Report GAO-09-551, Alaska Native Villages, Limited Progress Has Been Made on Relocating Villages Threatened by Erosion and Flooding (<http://www.gao.gov/assets/300/290468.pdf>), identified Shishmaref as an imminently threatened village seeking to relocate.

Shishmaref has also been identified as a “climate-induced relocation” site, per Climate-Induced Community Relocations: Creating an Adaptive Governance Framework based in Human Rights (<http://socialchangenyu.files.wordpress.com/2012/08/climate-induced-migration-bronen-35-2.pdf>).

National Climate Assessment: Regions: Coasts: Climate-related Drivers of Coastal Change (<http://nca2014.globalchange.gov/report/regions/coasts#narrative-page-16832>) identifies Shishmaref as an Alaska Village susceptible to climate change and erosion accelerated by storms and flooding.

### **Unmet Recovery Needs Threshold**

The City of Shishmaref has Unmet Recovery Needs, meaning needs that have not been addressed by federal, state, or other sources, in the area(s) identified in this letter as “most impacted and distressed.” The City of Shishmaref has not had a previous allocation of CDBG Disaster Recovery funds in response to major disasters in 2011, 2012, or 2013.

The City of Shishmaref meets the Unmet Needs criteria category of Environmental Degradation.

During the qualifying disaster event DR-4050, the City of Shishmaref suffered from damage due to inundation by high water and high winds. The ongoing erosion issues, which are exacerbated during disaster events, place housing, infrastructure, and economic revitalization at risk.

The Alaska Baseline Erosion Assessment, AVETA report summary – Shishmaref, Alaska ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Shishmaref\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Shishmaref_Final%20Report.pdf)) found that past erosion control efforts by the State, USACE, and BIA totaled in excess of \$9.5M. However, additional shoreline protection is needed in lieu of a relocation effort, at an estimated cost of \$25M. The USACE notes that protecting the airport would require additional funding. The USACE estimates a potential relocation to the western shores of Shishmaref Lagoon near Tin Creek at \$180M. The USACE estimated the cost of future damages to residential, commercial and public buildings due to erosion at \$47M - \$130M for the 50-year project horizon.

The City of Shishmaref elected to relocate in 2002 (City of Shishmaref 2007 LHMP, (<http://commerce.state.ak.us/DNN/Portals/4/Repository/Plans/Shishmaref%20-%20Feb%202010.pdf>) after erosion events associated with significant storms in 1997 and subsequent years forced relocation of a number of homes and the National Guard Armory. Despite efforts by the Governor’s Climate Change Sub Cabinet Immediate Action Working Group, the community has thus far been unable to relocate.

The LHMP identifies structure relocation and elevation as a required project type to mitigate the effects of flooding and erosion. However, the plan does not specify structures. Through project application development for elevation and relocation of structures in remote Alaska communities, DHS&EM estimates a cost of \$150K-250K per structure, depending upon the size, complexity, and viability of each structure.

The State of Alaska, DHS&EM estimates \$50K to \$100K required for technical assistance to develop project applications.

The above-listed Unmet Needs exceeds the \$400K minimum threshold.

## **6. CITY OF UNALAKLEET**

### **Most Impacted and Distressed Threshold**

The target area identified as most impacted and distressed is the *City of Unalakleet* as a result of the Presidentially-declared disasters DR-4050, which occurred in the eligible calendar year of 2011, and DR-4162, which occurred in the eligible calendar year of 2013. Unalakleet is a second class city in the Nome Census Area, which was declared a Qualified Disaster area.

The City of Unalakleet exhibits Most Impacted Characteristics and Most Distressed Characteristics which affect the ability of the area to recover from DR-4050 and DR-4162.

### *Most Impacted Characteristics*

The City of Unalakleet meets the Most Impacted Characteristics of Infrastructure and Environmental Degradation. Unalakleet suffers from environmental degradation due to coastal and riverine erosion. During the qualifying events, the City of Unalakleet sustained FEMA Category C-G damage to infrastructure.

#### DR-4050 City of Unalakleet FEMA Project Worksheets

PW #	Location	Project names	Cost
PA-10-AK-4050-PW-00001(1)	UNALAKLEET	UNC-D01 Sea Wall Damage	\$81,198.00
# of PWs: 1		Total cost:	\$81,198.00

#### DR-4162 City of Unalakleet FEMA Project Worksheets

PW #	Location	Project names	Cost
PA-10-AK-4162-PW-00022	UNALAKLEET	Arctic Pipe Water Line	\$110,374.50
PA-10-AK-4162-PW-00033	UNALAKLEET	Airport Road Damage	\$15,644.50
# of PWs: 2		Total cost:	\$126,019.00

This is significant impact to community infrastructure for a remote, tribal, poor and impoverished, subsistence-based community in Alaska in two federally-declared disasters in two years. Despite not meeting the \$2M FEMA Infrastructure damage threshold, the State of Alaska submits that the extent of these damages meets the intent of the “Most Impacted Infrastructure threshold. See the City of Unalakleet Community Profile data at <http://commerce.state.ak.us/cra/DCRAExternal/community/Details/57a6ea26-a741-4233-8ca5-48e47a21869f>.

The City of Unalakleet is identified by in the USACE Alaska Baseline Erosion Assessment, March 2009 ([http://www.climatechange.alaska.gov/docs/iaw\\_USACE\\_erosion\\_rpt.pdf](http://www.climatechange.alaska.gov/docs/iaw_USACE_erosion_rpt.pdf)) as a “Priority Action Community” where “erosion is threatening the viability of the community, significant resources are being expended to minimize such threats, or both conditions are present.”

In response to a request from Department of Homeland Security (DHS)/FEMA, the State of Alaska Department of Natural Resources(DNR)/Division of Geological and Geophysical Surveys (DGGS) Coastal Hazards Geologist conducted a net erosion calculation associated with the November 2013 storm (qualifying event DR-4162) along the old runway/evacuation route in Shaktoolik (qualifying target area). The report quantified the net shoreline retreat along the old runway/evacuation route in meters of shoreline lost inland in some vertical transects and area lost. See Most Impacted Section under Target Community Shaktoolik (10 of 16) for Shaktoolik analysis results. The State of Alaska CDBG-DR Interagency Working Group has requested a similar analysis for DR-4050 and DR-4162 for Unalakleet.



### ***Most Distressed Characteristics***

The City of Unalakleet meets the Most Distressed Characteristics of: Disaster impacted low- and moderate-income households; Disaster impacted an economically fragile area; and Disaster impacted an area with prior documented environmental distress.

Reference [www.HUDUSER.org/CBDGRDR/AppendixD](http://www.HUDUSER.org/CBDGRDR/AppendixD), the City of Unalakleet meets the disaster impacted low-and moderate-income threshold (52% low mod percentage).

Unalakleet is the area inhabited by members of the federally-recognized tribe the Native Village of Unalakleet. Additionally, the City is located in the Nome Census Area, with an unemployment rate of 13% (August 2014), well above 125% of the national average employment rate of 6.1% (August 2014).

Per the Alaska Department of Environmental Conservation (DEC) Contaminated Sites Program (<http://dec.alaska.gov/applications/spar/CSPSearch/results.asp>), the City of Unalakleet has seven Cleanup Complete sites and 18 Open sites.

Alaska Native Villages, Limited Progress Has Been Made on Relocating Villages Threatened by Flooding and Erosion (<http://www.gao.gov/assets/300/290468.pdf>) identifies Unalakleet as one of four villages considering options for gradually relocating to a nearby elevated site.

### **Unmet Recovery Needs Threshold**

The City of Unalakleet has Unmet Recovery Needs, meaning needs that have not been addressed by federal, state, or other sources, in the area(s) identified in this letter as “most impacted and distressed.” The City of Unalakleet has not had a previous allocation of CDBG Disaster Recovery funds in response to major disasters in 2011, 2012, or 2013.

The City of Unalakleet meets the Unmet Needs criteria category of Environmental Degradation.

During the qualifying disaster events DR-4050 and DR-4162, the City of Unalakleet suffered from damage due to inundation by high water and high winds. The ongoing erosion issues which are exacerbated during disaster events place housing, infrastructure, and economic revitalization at risk.

The Governor’s Climate Change Sub Cabinet Immediate Action Working (IAW) Group’s “Draft Recommendations report to the Governor’s Climate Change Sub Cabinet” on March 20, 2008 put Unalakleet at imminent threat from flooding and erosion, per FEMA-approved 2008 LHMP ([http://commerce.state.ak.us/DNN/Portals/4/Repository/Plans/Unalakleet\\_LHMP.pdf](http://commerce.state.ak.us/DNN/Portals/4/Repository/Plans/Unalakleet_LHMP.pdf)).

The LHMP quotes a 1500 foot long gabion revetment project along an existing but damaged previous NRCS project. The project estimate is \$12.8M. The LHMP specifies other projects such as a dike to protect utilities; elevating homes in the Happy Valley Subdivision; raising a berm surrounding the sewage lagoon; and relocation of the city and extending utilities to a new city site, but project costs are unspecified. Through project application development for elevation and relocation of structures in remote Alaska communities, DHS&EM estimates a cost of \$150K-250K per structure, depending upon the size, complexity, and viability of each structure.

The Alaska Baseline Erosion Assessment, AVETA report summary – Unalakleet, Alaska ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Unalakleet\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Unalakleet_Final%20Report.pdf)) found that previous erosion control efforts from NRCS in 2000, which totaled almost \$1.3M, suffered damage from a 2003 storm. The USACE estimates a cost of \$20M to repair/enhance this previous project. The USACE estimated the cost of future damages to residential, commercial and public buildings due to erosion at \$105M for the 50-year project horizon.

The State of Alaska, DHS&EM estimates \$50K to \$100K required for technical assistance to develop project applications.

The above-listed Unmet Needs exceeds the \$400K minimum threshold.

## 7. CITY OF EMMONAK

### **Most Impacted and Distressed Threshold**

The target area identified as most impacted and distressed is the *City of Emmonak* as a result of the Presidentially-declared disaster DR-4122, which occurred in the eligible calendar year of 2013. Emmonak, a second class city in the Wade Hampton Census Area, was declared a Qualified Disaster area.

The City of Emmonak exhibits Most Impacted Characteristics and Most Distressed Characteristics which affect the ability of the area to recover from DR-4122.

### ***Most Impacted Characteristics***

The City of Emmonak meets the Most Impacted Characteristics of Infrastructure and Environmental Degradation. The City of Emmonak suffers from environmental degradation due to riverine erosion. During the qualifying event, the City of Emmonak sustained FEMA Category C-G damage to infrastructure.

#### DR-4122 City of Emmonak FEMA Project Worksheets

PW #	Location	Project names	Cost
PA-10-AK-4050-PW-00001(1)	EMMONAK	City Roads and Culverts	\$682,982.03
# of PWs: 1		Total cost:	\$682,982.03

This is significant impact to community infrastructure for a remote, tribal, poor and impoverished, subsistence-based community in Alaska. Despite not meeting the \$2M FEMA Infrastructure damage threshold, the State of Alaska submits that the extent of these damages meets the intent of the “Most Impacted Infrastructure threshold. See Emmonak Community Profile data at (<http://commerce.state.ak.us/cra/DCRAExternal/community/Details/a450b1ef-2187-4c99-8dc7-3d059027c810>).

The Alaska Baseline Erosion Assessment, Erosion Information Paper – Emmonak, Alaska, August 5, 2007 ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Emmonak\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Emmonak_Final%20Report.pdf)) noted spring floods caused major erosion in 1972, 1985, 1989, 1992 and 2005. The 1994 USACE

Trip Report noted erosion on the City's waterfront ranged from two to 25 feet per year.

In response to a request from Department of Homeland Security (DHS)/FEMA, the State of Alaska Department of Natural Resources (DNR)/Division of Geological and Geophysical Surveys (DGGS) Coastal Hazards Geologist conducted a net erosion calculation associated with the November 2013 storm (qualifying event DR-4162) along the old runway/evacuation route in Shaktoolik (qualifying target area). The report quantified the net shoreline retreat along the old runway/evacuation route in meters of shoreline lost inland in some vertical transects and area lost. See Most Impacted Section under Target Community Shaktoolik (10 of 16) for Shaktoolik analysis results. The State of Alaska CDBG-DR Interagency Working Group has requested a similar analysis for DR-4122 for Emmonak.

### ***Most Distressed Characteristics***

The City of Emmonak meets the Most Distressed Characteristics of: Disaster impacted low- and moderate-income households; Disaster impacted an economically fragile area; and Disaster impacted an area with prior documented environmental distress.

Reference [www.HUDUSER.org/CBDGRDR/AppendixD](http://www.HUDUSER.org/CBDGRDR/AppendixD), the City of Emmonak meets the Disaster impacted low-and moderate-income threshold (66% low mod percentage).

The City of Emmonak is the area inhabited by members of the federally-recognized tribe Emmonak Village. Additionally, the City is located in the Wade Hampton Census Area, with an unemployment rate of 23% (August 2014), well above 125% of the national average employment rate of 6.1% (August 2014).

Per the Alaska Department of Environmental Conservation (DEC) Contaminated Sites Program (<http://dec.alaska.gov/applications/spar/CSPSearch/results.asp>), the City of Emmonak has one Cleanup Complete site and eight Open sites.

Emmonak has been identified by the Imperiled Community Water Resources Analysis ([http://www.climatechange.alaska.gov/docs/iaw\\_tt\\_imperiled\\_h2o\\_30jun10.pdf](http://www.climatechange.alaska.gov/docs/iaw_tt_imperiled_h2o_30jun10.pdf)) as a community likely to experience "near term climate change impacts to their water and wastewater infrastructure."

The City of Emmonak is identified by in the USACE Alaska Baseline Erosion Assessment, March 2009 ([http://www.climatechange.alaska.gov/docs/iaw\\_USACE\\_erosion\\_rpt.pdf](http://www.climatechange.alaska.gov/docs/iaw_USACE_erosion_rpt.pdf)) as a "Priority Action Community" where "erosion is threatening the viability of the community, significant resources are being expended to minimize such threats, or both conditions are present."

### **Unmet Recovery Needs Threshold**

The City of Emmonak has Unmet Recovery Needs, meaning needs that have not been addressed by federal, state, or other sources, in the area(s) identified in this letter as "most impacted and distressed." The City of Emmonak has not had a previous allocation of CDBG Disaster Recovery funds in response to major disasters in 2011, 2012, or 2013.

The City of Emmonak meets the Unmet Needs criteria category of Environmental Degradation.

During the qualifying disaster event DR-4122, the area suffered from damage due to inundation by high water and high winds. The ongoing erosion issues which are exacerbated during disaster events place housing, infrastructure, and economic revitalization at risk.

The 2014 draft Emmonak HMP's Vulnerability Assessment indicates that 64 residential structures valued at \$9,855,800 and six community facilities valued at \$9,414,768 are at risk from erosion. Critical facilities at risk include the City Women's Shelter, two churches, Lower Yukon School District Pre-School, health clinic, and YFDM Co-op Fisheries Building.

The 2008 FEMA-approved Emmonak HMP lists the following mitigation project types:

- Structure relocation and elevation-State of Alaska DHS&EM estimates similar project types in remote, rural communities at 150K-\$250K per structure depending upon structure size and complexity
- Updated FIRMS-identified at estimate cost of \$10K, however this is likely to be underestimated
- Upgraded streamflow and rainfall measuring gauges- \$10K
- Apply for grants to implement riverbank protection- DHS&EM estimates this effort at \$50K-\$100K
- Airport Road improvements- \$>100K
- Revetment repair and expansion- \$>100K
- Landfill flood protection- \$>100K

The above-listed Unmet Needs exceeds the \$400K minimum threshold.

## 8. CITY OF GOLOVIN

### **Most Impacted and Distressed Threshold**

The target area identified as most impacted and distressed is the *City of Golovin* as a result of the Presidentially-declared disaster DR-4050, which occurred in the eligible calendar year of 2011. Golovin is a second class city in the Nome Census Area, which was declared a Qualified Disaster area.

The City of Golovin exhibits Most Impacted Characteristics and Most Distressed Characteristics which affect the ability of the area to recover from DR-4050.

### ***Most Impacted Characteristics***

The City of Golovin meets the Most Impacted Characteristics of Infrastructure and Environmental Degradation. The City of Golovin suffers from environmental degradation due to coastal and riverine erosion. During the qualifying event, the City of Golovin sustained FEMA Category C-G damage to infrastructure.

### **DR-4050 City of Golovin FEMA Project Worksheets**

PW #	Location	Project names	Cost
PA-10-AK-4050-PW-00026(1)	GOLOVIN	GOC-G02 Boat Ramp Damage	6,593.46
PA-10-AK-4050-PW-00023(1)	GOLOVIN	GOC-G01 Floating Docks Damage	27,552.44
PA-10-AK-4050-PW-00028(1)	GOLOVIN	GOC-F02 Septic System	22,317.54
# of PWs: 3		Total cost:	\$34,145.90

This is significant impact to community infrastructure for a remote, tribal, poor and impoverished, subsistence-based community in Alaska. Despite not meeting the \$2M FEMA Infrastructure damage threshold, the State of Alaska submits that the extent of these damages meets the intent of the “Most Impacted Infrastructure threshold. See Golovin Community Profile data at <http://commerce.state.ak.us/cra/DCRAExternal/community/Details/b45416b3-6619-4f0a-9a0b-7e236e56992a>.

The Alaska Baseline Erosion Assessment, Erosion Information Paper – Golovin, Alaska ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Golovin\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Golovin_Final%20Report.pdf)) reports that coastal erosion in Golovin is caused by severe Bering Sea fall and winter storm surges, wind and waves and high tides, and ivu (ice override) events.

In response to a request from Department of Homeland Security (DHS)/FEMA, the State of Alaska Department of Natural Resources(DNR)/Division of Geological and Geophysical Surveys (DGGS) Coastal Hazards Geologist conducted a net erosion calculation associated with the November 2013 storm (qualifying event DR-4162) along the old runway/evacuation route in Shaktoolik (qualifying target area). The report quantified the net shoreline retreat along the old runway/evacuation route in meters of shoreline lost inland in some vertical transects and area lost. See Most Impacted Section under Target Community Shaktoolik (10 of 16) for Shaktoolik analysis results. The State of Alaska CDBG-DR Interagency Working Group has requested a similar analysis for DR-4050 for Golovin.

There are numerous studies and plans which address how ongoing erosion issues in Golovin, especially in conjunction with severe weather and flooding events, place housing, infrastructure and/or economic revitalization at risk.

### ***Most Distressed Characteristics***

The City of Golovin meets the Most Distressed Characteristics of: Disaster impacted low- and moderate-income households; Disaster impacted an economically fragile area; and Disaster impacted an area with prior documented environmental distress.

Reference [www.HUDUSER.org/CBDGRDR/AppendixD](http://www.HUDUSER.org/CBDGRDR/AppendixD), the City of Golovin meets the Disaster impacted low-and moderate-income threshold (87% low mod percentage).

The City of Golovin is the area inhabited by members of the federally-recognized tribe Chinik Eskimo Community. Additionally, the City of Golovin is located in the Nome Census Area, with an unemployment rate of 13% (August 2014), well above 125% of the national average employment rate of 6.1% (August 2014).

The City of Golovin is identified by the USACE Alaska Baseline Erosion Assessment, March 2009 ([http://www.climatechange.alaska.gov/docs/iaw\\_USACE\\_erosion\\_rpt.pdf](http://www.climatechange.alaska.gov/docs/iaw_USACE_erosion_rpt.pdf)) as a “Priority Action Community” where “erosion is threatening the viability of the community, significant resources are being expended to minimize such threats, or both conditions are present.”

Alaska Native Villages, Limited Progress Has Been Made on Relocating Villages Threatened by Flooding and Erosion (<http://www.gao.gov/assets/300/290468.pdf>) identifies Golovin as one of four villages considering options for gradually relocating to a nearby elevated site.

Golovin has been identified by the Imperiled Community Water Resources Analysis ([http://www.climatechange.alaska.gov/docs/iaw\\_tt\\_imperiled\\_h2o\\_30jun10.pdf](http://www.climatechange.alaska.gov/docs/iaw_tt_imperiled_h2o_30jun10.pdf)) as a community likely to experience “near term climate change impacts to their water and wastewater infrastructure.”

### **Unmet Recovery Needs Threshold**

The City of Golovin has Unmet Recovery Needs, meaning needs that have not been addressed by federal, state, or other sources, in the area(s) identified in this letter as “most impacted and distressed.” The City of Golovin has not had a previous allocation of CDBG Disaster Recovery funds in response to major disasters in 2011, 2012, or 2013.

The City of Golovin meets the Unmet Needs criteria category of Environmental Degradation.

During the qualifying disaster event DR-4050, the area suffered from damage due to inundation by high water and high winds. The ongoing erosion issues which are exacerbated during disaster events place housing, infrastructure, and economic revitalization at risk.

The FEMA-approved 2008 City of Golovin LHMP ([http://commerce.state.ak.us/DNN/Portals/4/Repository/Plans/Golovin\\_HMP.pdf](http://commerce.state.ak.us/DNN/Portals/4/Repository/Plans/Golovin_HMP.pdf)) Hazard Exposure Analysis indicates that 31 residential structures assessed at a value of \$4.4M and 23 critical facilities assessed at a value of \$42.4M are at risk from erosion. The City of Golovin’s Mitigation Action Plan Matrix Lists the following priority projects, but with no cost estimates.

- Elevate road with associated utility relocations
- Prioritize properties in need of erosion control measures to include identification of specific mitigation measures (technical assistance)
- Install, realign, or relocate culverts where needed
- Install erosion control measures such as gabion baskets, riprap, sheet piling, and/or geotextile fabric where needed, taking into consideration the potential effects of future ice override events
- Relocate or elevate assets that are at risk from erosion
- Relocate old landfill where west capped end is eroding based on Targeted Brownfields Assessment Recommendation
- The State of Alaska, DHS&EM estimates \$50K to \$100K required for technical assistance to develop project applications

The above-listed Unmet Needs exceeds the \$400K minimum threshold.

## **9. COMMUNITY OF KIPNUK**

### **Most Impacted and Distressed Threshold**

The target area identified as most impacted and distressed is the *Community of Kipnuk* as a result of the Presidentially-declared disaster DR-4050, which occurred in the eligible calendar year of 2011. Kipnuk, an unincorporated community in the Bethel Census Area, was declared a Qualified Disaster area.

Kipnuk exhibits Most Impacted Characteristics and Most Distressed Characteristics which affect the ability of the area to recover from DR-4050.

### ***Most Impacted Characteristics***

Kipnuk meets the Most Impacted Characteristic of Environmental Degradation. Kipnuk suffers from environmental degradation due to riverine erosion.

There are numerous studies and plans which address how ongoing erosion issues in Kipnuk, especially in conjunction with severe weather and flooding events, place housing, infrastructure and/or economic revitalization at risk.

The USACE Community Erosion Assessment-Kipnuk, Alaska, USACE Alaska Baseline Erosion Assessment, AVETA report summary – Kipnuk, Alaska, 26 January 2009 ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Kipnuk\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Kipnuk_Final%20Report.pdf)) states measurable erosion in Kipnuk is episodic, occurring mostly during fall storm season.

In response to a request from Department of Homeland Security (DHS)/FEMA, the State of Alaska Department of Natural Resources(DNR)/Division of Geological and Geophysical Surveys (DGGS) Coastal Hazards Geologist conducted a net erosion calculation associated with the November 2013 storm (qualifying event DR-4162) along the old runway/evacuation route in Shaktoolik (qualifying target area). The report quantified the net shoreline retreat along the old runway/evacuation route in meters of shoreline lost inland in some vertical transects and area lost. See Most Impacted Section under Target Community Shaktoolik (10 of 16) for Shaktoolik analysis results. The State of Alaska CDBG-DR Interagency Working Group has requested a similar analysis for DR-4050 for Kipnuk.

### ***Most Distressed Characteristics***

Kipnuk meets the Most Distressed Characteristics of: Disaster impacted low- and moderate-income households; Disaster impacted an economically fragile area; and Disaster impacted an area with prior documented environmental distress.

Reference [www.HUDUSER.org/CBDGRDR/AppendixD](http://www.HUDUSER.org/CBDGRDR/AppendixD), Kipnuk meets the Disaster impacted low- and moderate-income threshold (80% low mod percentage).

Kipnuk is the area inhabited by members of the federally-recognized tribe the Native Village of Kipnuk. Additionally, Kipnuk is located in the Bethel Census Area, with an unemployment rate of 23% (August 2014), well above 125% of the national average employment rate of 6.1% (August 2014).

Per the Alaska Department of Environmental Conservation (DEC) Contaminated Sites Program (<http://dec.alaska.gov/applications/spar/CSPSearch/results.asp>), Kipnuk has one Cleanup Complete site and one Open site.

Kipnuk has been identified by the USACE as an Alaska community with erosion issues per the Alaska Baseline Erosion Assessment (<http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/AlaskaBaselineErosionAssessmentBEAMainReport.pdf>).

An October 2011 Hazard Impact Assessment conducted in Kipnuk identified a number of environmental threats to the community including destructive seasonal and storm-related flooding,

riverbank erosion, and ground settlement due to thawing of permafrost ([http://commerce.state.ak.us/dnn/portals/4/pub/Kipnuk\\_Hazard\\_Assessment\\_Final.pdf](http://commerce.state.ak.us/dnn/portals/4/pub/Kipnuk_Hazard_Assessment_Final.pdf)).

### **Unmet Recovery Needs Threshold**

Kipnuk has Unmet Recovery Needs, meaning needs that have not been addressed by federal, state, or other sources, in the area(s) identified in this letter as “most impacted and distressed.” Kipnuk has not had a previous allocation of CDBG Disaster Recovery funds in response to major disasters in 2011, 2012, or 2013.

Kipnuk meets the Unmet Needs criteria category of Environmental Degradation.

During the qualifying disaster event DR-4050, Kipnuk suffered from damage due to inundation by high water and high winds. The ongoing erosion issues which are exacerbated during disaster events place housing, infrastructure, and economic revitalization at risk.

The USACE Community Erosion Assessment-Kipnuk, Alaska, USACE Alaska Baseline Erosion Assessment, AVETA report summary – Kipnuk, Alaska, 26 January 2009 ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Kipnuk\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Kipnuk_Final%20Report.pdf)) states measurable erosion in Kipnuk is episodic, occurring mostly during fall storm season. The report identifies total erosion damages in the 50-year period of analysis is \$30.2M. The primary erosion concern is the erosion of the fuel tanks. With the fuel tanks likely surrounded by contaminated soil, erosion concerns involve impacts to the local ecosystem and fish stocks. The USACE estimates decommission and closure of these facilities at \$4.9M. The report further recommends three mitigation solutions to erosion problem areas at costs of \$7.4M (sheet pile bulkhead), \$2.8M (rock revetment repair), and \$9.5M (rock revetment for unprotected banks).

The October 2011 Kipnuk Hazard Impact Assessment documented that during flooding, school access is sometimes restricted, and sewage lagoons and the landfill are sometimes overtopped. The entire community is subject to flooding during severe events. Riverbank erosion rates are estimated from 6 to 9 feet per year, though localized erosion rates vary. Residents reported between 15 and 20 feet of riverbank loss near the fuel transfer facility during the summer of 2009. Marginally frozen, thaw-unstable ground that is subject to thaw-settlement underlies Kipnuk, which results in ground surface subsidence, increasing the degree of flooding and potential loss of foundation support for public and private buildings.

The FEMA-approved 2013 Kipnuk LHMP (<http://commerce.state.ak.us/DNN/Portals/4/Repository/Plans/Kipnuk%20%20LHMP%202013.pdf>) Potential Hazard Exposure Analysis indicates 13 residential structures and 24 out buildings assessed at a value of \$2.7M are at risk from erosion, along with an additional \$20M in infrastructure. Kipnuk’s Mitigation Action Plan Matrix Lists the following priority projects, but with no cost estimates attached.

- Identify and pursue funding opportunities to implement mitigation actions
- Relocate or acquire (buy-out) and demolish structures from hazard-prone area
- Develop mitigation initiatives such as riprap, sheet pilings, gabion baskets, articulated matting, concrete, asphalt, vegetation or other armoring or protective materials to provide river bank protection



- Elevate residential, public or critical facilities to at least 2 feet above BFE (note: DHS&EM's recent experience elevating structures in remote communities indicates costs estimates of \$150K-250K per structure, depending upon the size, complexity, and viability.
- The State of Alaska, DHS&EM estimates \$50K to \$100K required for technical assistance to develop project applications

The above-listed Unmet Needs exceeds the \$400K minimum threshold.

## 10. CITY OF SHAKTOOLIK

### **Most Impacted and Distressed Threshold**

The target area identified as most impacted and distressed is the *City of Shaktoolik* as a result of the Presidentially-declared disasters DR-4050, which occurred in the eligible calendar year 2011, and DR-4162, which occurred in the eligible calendar year of 2013. Shaktoolik is a second class city in the Nome Census Area, which was declared a Qualified Disaster area.

Shaktoolik exhibits Most Impacted Characteristics and Most Distressed Characteristics which affect the ability of the area to recover from DR-4050 and DR-4162.

### ***Most Impacted Characteristics***

The City of Shaktoolik meets the Most Impacted Characteristics of Infrastructure and Environmental Degradation. The City of Shaktoolik suffers from environmental degradation due to coastal and riverine erosion. During the qualifying event, the City of Shaktoolik sustained FEMA Category C-G damage to infrastructure.

#### DR-4162 City of Shaktoolik FEMA Project Worksheets

PW #	Location	Project names	Cost
PA-10-AK-4162-PW-00029	SHAKTOOLIK	Septic System/Leach Field	\$11,156.61
PA-10-AK-4162-PW-00040	SHAKTOOLIK	RHH022C-Evacuation Road Damages	\$1,103,986.00
# of PWs: 2		Total cost:	\$1,115,142.61

This is significant impact to community infrastructure for a remote, tribal, poor and impoverished, subsistence-based community in Alaska. Despite not meeting the \$2M FEMA Infrastructure damage threshold, the State of Alaska submits that the extent of these damages meets the intent of the "Most Impacted Infrastructure threshold. See Shaktoolik Community Profile data at <http://commerce.state.ak.us/cra/DCRAExternal/community/Details/714db5e4-899f-423c-a78d-e2396ee6bfe8>.

The following studies address how ongoing erosion issues in Shaktoolik, especially in conjunction with severe weather and flooding events, place housing, infrastructure and/or economic revitalization at risk.

The USACE Community Erosion Assessment, Shaktoolik, Alaska, 11 March 2009  
([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Shaktoolik\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Shaktoolik_Final%20Report.pdf))

states Shaktoolik is subject to coastal and riverine erosion when fall storms impact the sand and gravel spit upon which the community sits. The report cites significant erosion events associated with storms in 2003, 2004, and 2005. At the time of this report, Shaktoolik has experienced flooding and expected associated erosion with the 2011 and 2013 storms. Three sections of the coastline are eroding at a rate of 1-3 feet per year, with most of the community assessed to be in the 100-year floodplain.

In response to a request from Department of Homeland Security (DHS)/FEMA, the State of Alaska Department of Natural Resources(DNR)/Division of Geological and Geophysical Surveys (DGGS) Coastal Hazards Geologist conducted a net erosion calculation associated with the November 2013 storm (qualifying event DR-4162) along the old runway/evacuation route in Shaktoolik (qualifying target area). The Coastal Hazards Geologist concluded, “While it is impossible to state with full certainty that all of the observed changes were associated with the November 2013 storms, it is reasonable to infer that nearly all observed coastal erosion in this timespan is directly or indirectly related to this cluster of storm events due to lack of other storm surge events in this one-year window that could have reached the stable/vegetated backshore.” The report quantified the net shoreline retreat along the old runway/evacuation route to be up to  $5.4 \pm 1.6$  m inland in some vertical transects, equating to an estimated area of 2,100 square meters. DHS/FEMA Public Assistance used this analysis to validate the eligibility of PW 40 referenced in the DR-4162 City of Shaktoolik FEMA Project Worksheets table above.

### ***Most Distressed Characteristics***

The City of Shaktoolik meets the Most Distressed Characteristics of: Disaster impacted low- and moderate-income households; Disaster impacted an economically fragile area; and Disaster impacted an area with prior documented environmental distress.

Reference [www.HUDUSER.org/CBDGRDR/AppendixD](http://www.HUDUSER.org/CBDGRDR/AppendixD), Shaktoolik meets the Disaster impacted low-and moderate-income threshold (51% low mod percentage).

The City of Shaktoolik is the area inhabited by members of the federally-recognized tribe the Native Village of Shaktoolik. Additionally, the City of Shaktoolik is located in the Nome Census Area, with an unemployment rate of 13% (August 2014), well above 125% of the national average employment rate of 6.1% (August 2014).

Per the Alaska Department of Environmental Conservation (DEC) Contaminated Sites Program (<http://dec.alaska.gov/applications/spar/CSPSearch/results.asp>), the City of Shaktoolik has two Cleanup Complete sites.

The City of Shaktoolik is identified by in the USACE Alaska Baseline Erosion Assessment, March 2009 ([http://www.climatechange.alaska.gov/docs/iaw\\_USACE\\_erosion\\_rpt.pdf](http://www.climatechange.alaska.gov/docs/iaw_USACE_erosion_rpt.pdf)) as a “Priority Action Community” where “erosion is threatening the viability of the community, significant resources are being expended to minimize such threats, or both conditions are present.”

The City of Shaktoolik is one of twelve communities identified for potential relocation by the IAW Group per Alaska Native Villages, Limited Progress Has Been Made on Relocating Villages Threatened by Flooding and Erosion (<http://www.gao.gov/assets/300/290468.pdf>).

### **Unmet Recovery Needs Threshold**

The City of Shaktoolik has Unmet Recovery Needs, meaning needs that have not been addressed by federal, state, or other sources, in the area(s) identified in this letter as “most impacted and distressed.” The City of Shaktoolik has not had a previous allocation of CDBG Disaster Recovery funds in response to major disasters in 2011, 2012, or 2013.

The City of Shaktoolik meets the Unmet Needs criteria category of Environmental Degradation.

During the qualifying disaster events DR-4050 and DR-4162, the City of Shaktoolik suffered from damage due to inundation by high water and high winds. The ongoing erosion issues which are exacerbated during disaster events place housing, infrastructure, and economic revitalization at risk.

The USACE Community Erosion Assessment, Shaktoolik, Alaska, 11 March 2009 report ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Shaktoolik\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Shaktoolik_Final%20Report.pdf)) identifies the following potential solutions.

- Relocation of threatened building and infrastructure, specifically the freshwater intake. (note: DHS&EM’s recent analysis through project application development, relocating and elevating structures in remote communities indicates costs estimates of \$150K-250K per structure, depending upon the size, complexity, and viability)
- Construction of an evacuation route for community access to refuge during storm events
- Village relocation. The report notes that village relocation may be cost prohibitive.
- Construction of a 4500-foot revetment that would protect the entire community at \$29.2M
- Construction of a 3,350-foot revetment that would protect the community’s fresh water intake at \$18.6M
- Construction of a groin field to trap sand migrating parallel to the shore to accrete material on the beach at \$30.8M
- Conduct of a beach nourishment program at \$36.5M

Additionally, the FEMA-approved 2009 City of Shaktoolik LMHMP (<http://commerce.state.ak.us/DNN/Portals/4/Repository/Plans/Shaktoolik%20-%20Feb%202010.pdf>) identified the following projects without cost data:

- Identify and pursue funding opportunities to implement mitigation actions
- Encourage utility companies to evaluate and harden vulnerable infrastructure elements for sustainability
- Relocate or acquire (buy-out) and demolish structures from hazard prone areas
- Develop mitigation initiatives such as riprap, sheet pilings, gabion baskets, articulated matting, concrete, asphalt, vegetation or other armoring or protective materials to provide river bank protection
- Elevate residential, public or critical facilities to at least 2 feet above BFE (note: DHS&EM’s recent experience elevating structures in remote communities indicates costs estimates of \$150K-250K per structure, depending upon the size, complexity, and viability)
- The State of Alaska, DHS&EM estimates \$50K to \$100K required for technical assistance to develop project applications

The above-listed Unmet Needs exceeds the \$400K minimum threshold.

## 11. CITY OF HUGHES

### Most Impacted and Distressed Threshold

The target area identified as most impacted and distressed is the *City of Hughes* as a result of the Presidentially-declared disaster DR-4122, which occurred in the eligible calendar year of 2013. Hughes is a second class city in the Yukon-Koyukuk Census Area, which was declared a Qualified Disaster area.

The City of Hughes exhibits Most Impacted Characteristics and Most Distressed Characteristics which affect the ability of the area to recover from DR-4122.

### *Most Impacted Characteristics*

The City of Hughes meets the Most Impacted Characteristics of Infrastructure and Environmental Degradation. The City of Hughes suffers from environmental degradation due to riverine erosion. During the qualifying event, the City of Hughes sustained FEMA Category C-G damage to infrastructure.

#### DR-4122 City of Hughes FEMA Project Worksheets

PW #	Location	Project names	Cost
PA-10-AK-4122-PW-00022(2)	HUGHES	Repair Damages to Public Buildings and Facilities	\$6,344.21
PA-10-AK-4162-PW-00023(2)	HUGHES	Repair Community Hall	\$4,160.36
# of PWs: 2		Total cost:	\$10,504.57

This is significant impact to community infrastructure for a remote, tribal, poor and impoverished, subsistence-based community in Alaska. Despite not meeting the \$2M FEMA Infrastructure damage threshold, the State of Alaska submits that the extent of these damages meets the intent of the “Most Impacted Infrastructure threshold. See the City of Hughes Community Profile data at <http://commerce.state.ak.us/cra/DCRAExternal/community/Details/4a615452-5e25-422a-85f3-c6b7307be136>.

There are studies which address how ongoing erosion issues in Hughes, especially in conjunction with severe weather and flooding events, place housing, infrastructure, and/or economic revitalization at risk.

The USACE, Alaska Baseline Erosion Assessment, Erosion Information Paper, Hughes, Alaska, April 23, 2008 ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Hughes\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Hughes_Final%20Report.pdf)) describes a 1200-foot long active area of erosion at the north end of the community, which threatens homes, out-buildings, sheds, drying racks, smokehouses, a road, and the end of the airport runway.

In response to a request from Department of Homeland Security (DHS)/FEMA, the State of Alaska Department of Natural Resources(DNR)/Division of Geological and Geophysical Surveys (DGGS) Coastal Hazards Geologist conducted a net erosion calculation associated with the November 2013 storm (qualifying event DR-4162) along the old runway/evacuation route in Shaktoolik (qualifying

target area). The report quantified the net shoreline retreat along the old runway/evacuation route in meters of shoreline lost inland in some vertical transects and area lost. See Most Impacted Section under Target Community Shaktoolik (10 of 16) for Shaktoolik analysis results. The State of Alaska CDBG-DR Interagency Working Group has requested a similar analysis for DR-4122 for Hughes.

### ***Most Distressed Characteristics***

The City of Hughes meets the Most Distressed Characteristics of: Disaster impacted low- and moderate-income households; Disaster impacted an economically fragile area; and Disaster impacted an area with prior documented environmental distress.

Reference [www.HUDUSER.org/CBDGRDR/AppendixD](http://www.HUDUSER.org/CBDGRDR/AppendixD), the City of Hughes meets the Disaster impacted low-and moderate-income threshold (56% low mod percentage).

The City of Hughes is the area inhabited by members of the federally-recognized tribe Hughes Village. Additionally, the City is located in the Yukon-Koyukuk Census Area, with an unemployment rate of 13% (August 2014), well above 125% of the national average employment rate of 6.1% (August 2014).

Per the Alaska Department of Environmental Conservation (DEC) Contaminated Sites Program (<http://dec.alaska.gov/applications/spar/CSPSearch/results.asp>), the City of Hughes has one Cleanup Complete site and 19 Open sites.

The USACE, Alaska Baseline Erosion Assessment, Erosion Information Paper, Hughes, Alaska, April 23, 2008 ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Hughes\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Hughes_Final%20Report.pdf)) describes a 1200-foot long active area of erosion at the north end of the community, which threatens homes, out-buildings, sheds, drying racks, smokehouses, a road, and the end of the airport runway. There are no erosion protection measures in place. The report notes Hughes' history of flooding and associated erosion in 1937, 1938, 1963, 1964, 1965, 1966, 1968, 1972, 1989, and 1994. The 2010 City of Hughes FEMA-approved LHMP (<http://commerce.state.ak.us/DNN/Portals/4/Repository/Plans/Hughes%20-%20Sep%202010.pdf>) further notes additional flooding events in 1998, 2004, and 2006. We add the qualifying event in 2013 to the list of flood and erosion events.

The USACE Alaska Baseline Erosion Assessment (<http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/AlaskaBaselineErosionAssessmentBEAMainReport.pdf>) assigned the City of Hughes a "Monitor Conditions" status and stated while erosion impacts may not affect the viability of the community, erosion impacts may warrant Federal, State or other intervention.

The City of Hughes is also identified as a community with imperiled water resources due to the effects of persistent erosion and flooding, per Imperiled Community Water Resources Analysis ([http://www.climatechange.alaska.gov/docs/iaw\\_tt\\_imperiled\\_h2o\\_30jun10.pdf](http://www.climatechange.alaska.gov/docs/iaw_tt_imperiled_h2o_30jun10.pdf)).

### **Unmet Recovery Needs Threshold**

The City of Hughes has Unmet Recovery Needs, meaning needs that have not been addressed by federal, state, or other sources, in the area(s) identified in this letter as "most impacted and

distressed.” The City of Hughes has not had a previous allocation of CDBG Disaster Recovery funds in response to major disasters in 2011, 2012, or 2013.

The City of Hughes meets the Unmet Needs criteria category of Environmental Degradation.

During the qualifying disaster event DR-4122, the area suffered from damage due to inundation by high water and high winds. The ongoing erosion issues which are exacerbated during disaster events place housing, infrastructure, and economic revitalization at risk.

The 2010 City of Hughes FEMA-approved LHMP

(<http://commerce.state.ak.us/DNN/Portals/4/Repository/Plans/Hughes%20-%20Sep%202010.pdf>)

Potential Hazard Exposure Analysis indicates that seven residential structures valued at \$295,000 are at risk from erosion. A 2013 HMGP project application development effort at DHS&EM ascertained a total project cost of \$1,348,980.96 to relocate and elevate 10 structures.

The LHMP further identifies the following mitigation goals and potential actions:

- Identify and pursue funding opportunities to implement mitigation actions
- Relocate or acquire (buy-out) and demolish structures from hazard prone areas
- Harden utility headers located along river embankments to mitigate potential flood, debris, and erosion damages
- Develop vegetation projects to restore hillside and riverine erosion damage and to increase landslide slope stability
- Perform hydraulic and hydrologic engineering, and drainage studies and analysis. Use information obtained for feasibility determination and project design.
- Develop, maintain, and update erosion hazard locations, identify critical facilities potentially impacted, and develop mitigation initiatives such as bank stabilization or facility relocation to prevent or reduce the threat
- Relocate buildings that are at risk of being affected by erosion
- Apply for grants/funds to implement riverbank protection methods
- Develop and provide information to all residents on hillside and riverbank erosion and methods to present it in an easily distributed format
- Harden culvert protection such as vegetation, riprap, gabion baskets, sheet piling, and walls to reduce or eliminate erosion
- Install walls at the end of a drainage structure to prevent embankment erosion at its entrance or outlet (end walls)
- Install revetment protection to prevent erosion
- Elevate residential, public or critical facilities to at least 2 feet above BFE (note: DHS&EM’s recent experience elevating structures in remote communities indicates costs estimates of \$150K-250K per structure, depending upon the size, complexity, and viability)
- The State of Alaska, DHS&EM estimates \$50K to \$100K required for technical assistance to develop project applications

The above-listed Unmet Needs exceeds the \$400K minimum threshold.

## 12. CITY OF TELLER

### **Most Impacted and Distressed Threshold**

The target area identified as most impacted and distressed is the *City of Teller* as a result of the Presidentially-declared disaster DR-4050, which occurred in the eligible calendar year of 2011. Teller is a second class city in the Nome Census Area, which was declared a Qualified Disaster area.

The City of Teller exhibits Most Impacted Characteristics and Most Distressed Characteristics which affect the ability of the area to recover from DR-4050.

### ***Most Impacted Characteristics***

The City of Teller meets the Most Impacted Characteristic of Environmental Degradation. The City of Teller suffers from environmental degradation due to coastal erosion.

There are studies which address how ongoing erosion issues in Teller, especially in conjunction with severe weather and flooding events, place housing, infrastructure and/or economic revitalization at risk.

The USACE Alaska Baseline Erosion Assessment, Erosion Information Paper-Teller, Alaska, May 2, 2008 ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Teller\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Teller_Final%20Report.pdf)) states storm surges, high tides, and wind driven waves reportedly contribute to slow but persistent erosion at Teller along the western Port Clarence side. The erosion area is approximately 600 feet long with a 10-foot-high bank. The City has stated that the erosion threat to the cemetery (graves) is a priority.

In response to a request from Department of Homeland Security (DHS)/FEMA, the State of Alaska Department of Natural Resources(DNR)/Division of Geological and Geophysical Surveys (DGGS) Coastal Hazards Geologist conducted a net erosion calculation associated with the November 2013 storm (qualifying event DR-4162) along the old runway/evacuation route in Shaktoolik (qualifying target area). The report quantified the net shoreline retreat along the old runway/evacuation route in meters of shoreline lost inland in some vertical transects and area lost. See Most Impacted Section under Target Community Shaktoolik (10 of 16) for Shaktoolik analysis results. The State of Alaska CDBG-DR Interagency Working Group has requested a similar analysis for DR-4050 for Teller.

### ***Most Distressed Characteristics***

The City of Teller meets the Most Distressed Characteristics of: Disaster impacted low- and moderate-income households; Disaster impacted an economically fragile area; and Disaster impacted an area with prior documented environmental distress.

Reference [www.HUDUSER.org/CBDGRDR/AppendixD](http://www.HUDUSER.org/CBDGRDR/AppendixD), the City of Teller meets the Disaster impacted low-and moderate-income threshold (89% low mod percentage).

The City of Teller is the area inhabited by members of the federally-recognized tribe the Native Village of Teller. Additionally, the City is located in the Nome Census Area, with an unemployment rate of 13% (August 2014), well above 125% of the national average employment rate of 6.1% (August 2014).

Per the Alaska Department of Environmental Conservation (DEC) Contaminated Sites Program (<http://dec.alaska.gov/applications/spar/CSPSearch/results.asp>), the City of Teller has three Cleanup Complete sites.

The USACE Alaska Baseline Erosion Assessment, Erosion Information Paper-Teller, Alaska, May 2, 2008 ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Teller\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Teller_Final%20Report.pdf)) states storm surges, high tides, and wind driven waves reportedly contribute to slow but persistent erosion at Teller along the western Port Clarence side. The erosion area is approximately 600 feet long with a 10-foot-high bank. The City has stated that the erosion threat to the cemetery (graves) is a priority.

The 2013 FEMA-approved City of Teller LHMP (<http://commerce.state.ak.us/DNN/Portals/4/Repository/Plans/Teller%20LHMP%202013.pdf>) lists other impacts of erosion as increased coastal area sedimentation and hindrance of in-shore navigation, water quality reduction due to high sediment loads, loss of native aquatic habitats, damage to public utilities (fuel headers and electric and water/wastewater utilities), sewage lagoons and potable water sources, and economic impacts associated with the costs of trying to prevent or control erosion sites.

### **Unmet Recovery Needs Threshold**

The City of Teller has Unmet Recovery Needs, meaning needs that have not been addressed by federal, state, or other sources, in the area(s) identified in this letter as “most impacted and distressed.” The City of Teller has not had a previous allocation of CDBG Disaster Recovery funds in response to major disasters in 2011, 2012, or 2013.

The City of Teller meets the Unmet Needs criteria category of Environmental Degradation.

During the qualifying disaster event DR-4050, the City of Teller suffered from damage due to inundation by high water and high winds. The ongoing erosion issues which are exacerbated during disaster events place housing, infrastructure, and economic revitalization at risk.

The 2013 FEMA-approved City of Teller LHMP (<http://commerce.state.ak.us/DNN/Portals/4/Repository/Plans/Teller%20LHMP%202013.pdf>) identifies six government and emergency response facilities within 300 feet of erosion areas valued at \$746,466; one educational structure valued at \$9.6M; and nine community buildings valued at \$2.0M. Critical infrastructure at risk from erosion includes five miles of road, two buildings, and 15 utilities valued at \$22.6M. Two hundred fifty residents are at risk in 86 residential structures valued at approximately \$37.5M.

The City of Teller LHMP further identifies the following potential mitigation actions:

- Identify and pursue funding opportunities to implement mitigation actions
- Develop mitigation initiatives such as riprap, sheet pilings, gabion baskets, articulated matting, concrete, asphalt, vegetation or other armoring or protective materials to provide river bank protection
- Protect wastewater treatment systems to prevent flood and erosion damage and sewage lagoon wash-out



- Encourage local utility companies to harden vulnerable infrastructure elements for sustainability
- The State of Alaska, DHS&EM estimates \$50K to \$100K required for technical assistance to develop project applications

The above-listed Unmet Needs exceeds the \$400K minimum threshold.

### **13. CITY OF ELIM**

#### **Most Impacted and Distressed Threshold**

The target area identified as most impacted and distressed is the *City of Elim* as a result of the Presidentially-declared disaster DR-4050, which occurred in the eligible calendar year of 2011. The City of Elim is second class city in the Nome Census Area, which was declared a Qualified Disaster area.

The City of Elim exhibits Most Impacted Characteristics and Most Distressed Characteristics which affect the ability of the area to recover from DR-4050.

#### ***Most Impacted Characteristics***

The City of Elim meets the Most Impacted Characteristic Environmental Degradation. The City of Elim suffers from environmental degradation due to coastal erosion.

There are studies which address how ongoing erosion issues in Elim, especially in conjunction with severe weather and flooding events, place housing, infrastructure and/or economic revitalization at risk.

The USACE Alaska Baseline Erosion Assessment, Erosion Information Paper-Elim, Alaska, February 8, 2008 ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Elim\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Elim_Final%20Report.pdf)) states storm surges, high tides, and wind driven waves reportedly contribute to periodic coastal erosion. The lower areas along Elim Creek are subject to storm surge flooding and erosion. The community identified the primary erosion area along the town front.

In response to a request from Department of Homeland Security (DHS)/FEMA, the State of Alaska Department of Natural Resources(DNR)/Division of Geological and Geophysical Surveys (DGGS) Coastal Hazards Geologist conducted a net erosion calculation associated with the November 2013 storm (qualifying event DR-4162) along the old runway/evacuation route in Shaktoolik (qualifying target area). The report quantified the net shoreline retreat along the old runway/evacuation route in meters of shoreline lost inland in some vertical transects and area lost. See Most Impacted Section under Target Community Shaktoolik (10 of 16) for Shaktoolik analysis results. The State of Alaska CDBG-DR Interagency Working Group has requested a similar analysis for DR-4050 for Elim.

#### ***Most Distressed Characteristics***

The City of Elim meets the Most Distressed Characteristics of: Disaster impacted low- and moderate-income households; Disaster impacted an economically fragile area; and Disaster impacted an area with prior documented environmental distress.

Reference [www.HUDUSER.org/CBDGRDR/AppendixD](http://www.HUDUSER.org/CBDGRDR/AppendixD), the City of Elim meets the Disaster impacted low-and moderate-income threshold (59% low mod percentage).

The City of Elim is the area inhabited by members of the federally-recognized tribe the Native Village of Elim. Additionally, the City of Elim is located in the Nome Census Area, with an unemployment rate of 13% (August 2014), well above 125% of the national average employment rate of 6.1% (August 2014).

Per the Alaska Department of Environmental Conservation (DEC) Contaminated Sites Program (<http://dec.alaska.gov/applications/spar/CSPSearch/results.asp>), the City of Elim has two Cleanup Complete sites and seven Open sites.

The USACE Alaska Baseline Erosion Assessment (<http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/AlaskaBaselineErosionAssessmentBEAMainReport.pdf>) assigned the City of Elim a “Monitor Conditions” status and stated that while erosion impacts may not affect the viability of the community, erosion impacts may warrant Federal, State or other intervention.

### **Unmet Recovery Needs Threshold**

The City of Elim has Unmet Recovery Needs, meaning needs that have not been addressed by federal, state, or other sources, in the area(s) identified in this letter as “most impacted and distressed.” The City of Elim has not had a previous allocation of CDBG Disaster Recovery funds in response to major disasters in 2011, 2012, or 2013.

The City of Elim meets the Unmet Needs criteria category of Environmental Degradation.

During the qualifying disaster event DR-4050, the area suffered from damage due to inundation by high water and high winds. The ongoing erosion issues which are exacerbated during disaster events place housing, infrastructure, and economic revitalization at risk.

The USACE Alaska Baseline Erosion Assessment, Erosion Information Paper-Elim, Alaska, February 8, 2008 ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Elim\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Elim_Final%20Report.pdf)) states there are four residences less than 100 feet from the erosion area. The Native store shed, a water main, drying racks and smoke houses, Beach Road, a bridge, and sanitary sewer lines are identified as threatened by erosion.

The 2014 FEMA-approved Elim HMP indicates that one educational building estimated at a value of \$12,882,431; 1.5 miles of road at an estimated value of \$1,125,000; one bridge estimated at \$26,316; three utilities estimated at \$1,675,000; and seven residential structures valued at \$2,500,000 are at risk from erosion. Mitigation of these facilities from erosion would well-exceed the \$400K minimum threshold for unmet needs.

Additionally, the City of Elim HMP lists the following potential mitigation actions:

- Acquire (buyout), demolish, or relocate structures from hazard prone areas

- Encourage utility companies to evaluate and harden vulnerable infrastructure elements for sustainability
- Provide erosion control along Moses Point Road (\$10M)
- Provide erosion protection for Beachfront Road (\$6M)
- Develop mitigation initiatives such as riprap, sheet pilings, gabion baskets, articulate matting, concrete, asphalt, vegetation, or other armoring or protective materials to provide riverbank protection
- Determine and implement most cost beneficial and feasible mitigation actions for locations with repetitive flooding, significant historical damages, or road closures
- Relocate the water source and increase storage capacity (out of the floodplain)
- Protect wastewater disposal system from erosion, flood damage and washout
- Wave, Storm surge barrier
- Elim Creek Bridge replacement
- The State of Alaska, DHS&EM estimates \$50K to \$100K required for technical assistance to develop project applications

The above-listed Unmet Needs exceeds the \$400K minimum threshold.

#### 14. CITY OF SEWARD

##### Most Impacted and Distressed Threshold

The target area identified as most impacted and distressed is the *City of Seward* as a result of the Presidentially-declared disasters DR-4054, DR-4094, and DR-4161 which occurred in the eligible calendar years 2011, 2012 and 2013, respectively. Seward is a home rule city in the Kenai Peninsula Borough, which was declared a Qualified Disaster area.

The City of Seward exhibits Most Impacted Characteristics and Most Distressed Characteristics which affect the ability of the area to recover from DR-4054, DR-4094, and DR-4161.

##### *Most Impacted Characteristics*

The City of Seward meets the Most Impacted Characteristics of Housing, Infrastructure and Environmental Degradation. The City of Seward suffers from environmental degradation due to coastal and riverine erosion. During the qualifying event, the City of Seward sustained FEMA Category C-G damage to infrastructure.

##### DR-4094 City of Seward FEMA Project Worksheets

PW #	Location	Project names	Cost
PA-10-AK-4094-PW-00064(0)	SEWARD	Repair Utilities	\$244,632.88
PA-10-AK-4094-PW-00047(0)	SEWARD	Lowell Creek Bridge	\$40,591.78
PA-10-AK-4094-PW-00060(0)	SEWARD	Electric pole and anchor line	\$1,472.84
# of PWs: 3		Total cost:	\$286,697.50

#### DR-4161 City of Seward FEMA Project Worksheets

PW #	Location	Project names	Cost
PA-10-AK-4161-PW-00023(0)	SEWARD	Road repair	\$23,533.73
# of PWs: 3		Total cost:	\$23,533.73

This is significant impact to community infrastructure for a small community in Alaska. Despite not meeting the \$2M FEMA Infrastructure damage threshold, the State of Alaska submits that the extent of these damages meets the intent of the “Most Impacted Infrastructure” threshold. See City of Seward Community Profile data at

<http://commerce.state.ak.us/cra/DCRAExternal/community/Details/326d957a-dc0c-4e28-9406-fc2c89a68cef>.

There are studies which address how ongoing erosion issues in Seward, especially in conjunction with severe weather and flooding events, place housing, infrastructure and/or economic revitalization at risk.

The USACE Alaska Baseline Erosion Assessment, Erosion Information Paper-Seward, Alaska, February 8, 2008

([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Seward\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Seward_Final%20Report.pdf))

states Seward has a continuous erosion problem associated with drainages from the mountains surrounding Resurrection Bay. Channel migrations in alluvial fan areas, glacial debris in streams, and periodically heavy rainfall contribute to erosion in the City of Seward.

In response to a request from Department of Homeland Security (DHS)/FEMA, the State of Alaska Department of Natural Resources(DNR)/Division of Geological and Geophysical Surveys (DGGS) Coastal Hazards Geologist conducted a net erosion calculation associated with the November 2013 storm (qualifying event DR-4162) along the old runway/evacuation route in Shaktoolik (qualifying target area). The report quantified the net shoreline retreat along the old runway/evacuation route in meters of shoreline lost inland in some vertical transects and area lost. See Most Impacted Section under Target Community Shaktoolik (10 of 16) for Shaktoolik analysis results. The State of Alaska CDBG-DR Interagency Working Group has requested a similar analysis for DR-4054, DR-4094, and DR-4161 for Seward.

#### ***Most Distressed Characteristics***

Seward meets the Most Distressed Characteristics of: Disaster impacted an area with prior documented environmental distress.

Per the Alaska Department of Environmental Conservation (DEC) Contaminated Sites Program (<http://dec.alaska.gov/applications/spar/CSPSearch/results.asp>), the City of Seward has 53 Cleanup Complete sites and eight Open sites.

The USACE Alaska Baseline Erosion Assessment

(<http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/AlaskaBaselineErosionAssessment/BEAMainReport.pdf>) assigned the City of Seward a “Monitor Conditions” status and stated while erosion impacts may not affect the viability of the community, erosion impacts may warrant Federal, State or other intervention.

### **Unmet Recovery Needs Threshold**

The City of Seward has Unmet Recovery Needs, meaning needs that have not been addressed by federal, state, or other sources, in the area(s) identified in this letter as “most impacted and distressed.” The City of Seward has not had a previous allocation of CDBG Disaster Recovery funds in response to major disasters in 2011, 2012, or 2013.

The City of Seward meets the Unmet Needs criteria category of Environmental Degradation.

During the qualifying disaster events DR-4054, DR-4094, DR-4161, the area suffered from damage due to inundation by heavy rainfall and flooding. The ongoing erosion issues which are exacerbated during disaster events place housing, infrastructure, and economic revitalization at risk.

The USACE Alaska Baseline Erosion Assessment, Erosion Information Paper-Seward, Alaska, February 8, 2008 ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Seward\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Seward_Final%20Report.pdf)) lists potential damages as erosion of Lowell Point Road (the only road connection from Seward to the Lowell Point Community), which could in turn damage sewer lines along the road. The Japanese Creek Levee and airport runway are also at risk from erosion during storm and flood events.

The FEMA-approved 2014 Kenai Peninsula Borough HMP (<http://www.borough.kenai.ak.us/images/KPB/PLN/PlansReports/MitigationPlan/2.0Floodfinal2014.pdf>) lists the following possible mitigation projects:

- Raise bridges or dredge gravel and to debris to improve clearance and conveyance in the Old Mill Subdivision
- Construct a second tunnel (Lowell Creek Tunnel) to mitigate effect of blockage of current tunnel by debris
- Clear Resurrection River span bridges. Coordinate with ADOT&PF to build upgrades
- Divert/improve drainage/dredge of Seward Airport runway flood-prone areas
- Elevate Salmon Creek Bridge span to increase and maintain water conveyance
- Raise Nash Road Bridge and remove gravel and debris.

It is likely any one of these potential projects (Unmet Needs) would exceed the \$400K threshold.

## **15. CITY OF FORT YUKON**

### **Most Impacted and Distressed Threshold**

The target area identified as most impacted and distressed is the *City of Fort Yukon* as a result of the Presidentially-declared disaster DR-4122, which occurred in the eligible calendar year of 2013. The City of Fort Yukon is a second class city in the Yukon-Koyukuk Census Area, which was declared a Qualified Disaster area.

Fort Yukon exhibits Most Impacted Characteristics and Most Distressed Characteristics which affect the ability of the area to recover from DR-4122.

### ***Most Impacted Characteristics***

Fort Yukon meets the Most Impacted Characteristics of Infrastructure and Environmental Degradation. Fort Yukon suffers from environmental degradation due to riverine erosion. During the qualifying event, the City of Fort Yukon sustained FEMA Category C-G damage to infrastructure.

#### **DR-4122 City of Fort Yukon FEMA Project Worksheets**

PW #	Location	Project names	Cost
PA-10-AK-4122-PW-00034(0)	FORT YUKON	Road repair	\$251,928.36
PA-10-AK-4122-PW-00058(0)	FORT YUKON	Lift station #3 fence	\$14,706.88
# of PWs: 2		Total cost:	\$266,635.24

This is significant impact to community infrastructure for a remote, tribal, poor and impoverished, subsistence-based community in Alaska. Despite not meeting the \$2M FEMA Infrastructure damage threshold, the State of Alaska submits that the extent of these damages meets the intent of the “Most Impacted Infrastructure threshold. See City of Fort Yukon Community Profile data at <http://commerce.state.ak.us/cra/DCRAExternal/community/Details/55046141-8e15-453b-8d4b-377858142554>.

There are studies which address how ongoing erosion issues in Fort Yukon, especially in conjunction with severe weather and flooding events, place housing, infrastructure and/or economic revitalization at risk.

The USACE Alaska Baseline Erosion Assessment, Erosion Information Paper-Fort Yukon, Alaska, January 21, 2008 ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Fort%20Yukon\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Fort%20Yukon_Final%20Report.pdf)) states the City of Fort Yukon suffers from bank erosion along the Yukon River due to natural river flow, water level changes, flooding, ice jams, spring break up, melting permafrost, boat traffic, pedestrian traffic, and vehicle traffic. The riverbank is estimated to erode at a rate of 10 to 15 feet per year along a 1200 to 1500 foot stretch.

In response to a request from Department of Homeland Security (DHS)/FEMA, the State of Alaska Department of Natural Resources(DNR)/Division of Geological and Geophysical Surveys (DGGS) Coastal Hazards Geologist conducted a net erosion calculation associated with the November 2013 storm (qualifying event DR-4162) along the old runway/evacuation route in Shaktoolik (qualifying target area). The report quantified the net shoreline retreat along the old runway/evacuation route in meters of shoreline lost inland in some vertical transects and area lost. See Most Impacted Section under Target Community Shaktoolik (10 of 16) for Shaktoolik analysis results. The State of Alaska CDBG-DR Interagency Working Group has requested a similar analysis for DR-4122 for Fort Yukon.

### ***Most Distressed Characteristics***

The City of Fort Yukon meets the Most Distressed Characteristics of: Disaster impacted low- and moderate-income households; Disaster impacted an economically fragile area; and Disaster impacted an area with prior documented environmental distress.

Reference [www.HUDUSER.org/CBDGRDR/AppendixD](http://www.HUDUSER.org/CBDGRDR/AppendixD), Fort Yukon meets the Disaster impacted low-and moderate-income threshold (62% low mod percentage).

Fort Yukon is the area inhabited by members of the federally-recognized tribe the Native Village of Fort Yukon. Additionally, the City of Fort Yukon is located in the Yukon-Koyukuk Census Area, with an unemployment rate of 13% (August 2014), well above 125% of the national average employment rate of 6.1% (August 2014).

Per the Alaska Department of Environmental Conservation (DEC) Contaminated Sites Program (<http://dec.alaska.gov/applications/spar/CSPSearch/results.asp>), City of Fort Yukon has 19 Cleanup Complete sites and eight Open sites.

The City of Fort Yukon has been identified by the Imperiled Community Water Resources Analysis ([http://www.climatechange.alaska.gov/docs/iaw\\_tt\\_imperiled\\_h2o\\_30jun10.pdf](http://www.climatechange.alaska.gov/docs/iaw_tt_imperiled_h2o_30jun10.pdf)) as a community likely to experience “near term climate change impacts to their water and wastewater infrastructure.”

The USACE Alaska Baseline Erosion Assessment (<http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/AlaskaBaselineErosionAssessmentBEAMainReport.pdf>) assigned the City of Fort Yukon a “Monitor Conditions” status and stated while erosion impacts may not affect the viability of the community, erosion impacts may warrant Federal, State or other intervention.

### **Unmet Recovery Needs Threshold**

The City of Fort Yukon has Unmet Recovery Needs, meaning needs that have not been addressed by federal, state, or other sources, in the area(s) identified in this letter as “most impacted and distressed.” The City of Fort Yukon has not had a previous allocation of CDBG Disaster Recovery funds in response to major disasters in 2011, 2012, or 2013.

The City of Fort Yukon meets the Unmet Needs criteria category of Environmental Degradation.

During the qualifying disaster event DR-4122, the City of Fort Yukon suffered from damage due to inundation by high water, ice and woody debris. The ongoing erosion issues which are exacerbated during disaster events place housing, infrastructure, and economic revitalization at risk.

The City of Fort Yukon HMP (<http://commerce.state.ak.us/DNN/Portals/4/Repository/Plans/Fort%20Yukon%20-%20August%20201.pdf>) Potential Hazard Exposure Analysis lists no critical infrastructure at risk from erosion, but lists one bridge valued at \$300K and 2 utilities valued at \$2.6M at risk.

The HMP further identifies mitigation goals and actions:

- Identify and pursue funding opportunities to implement mitigation actions
- Acquire (buy-out), demolish, or relocate structures from hazard prone areas
- Harden utility headers located along river embankments to mitigate potential flood, debris, and erosion damages
- Develop vegetation projects to restore clear-cut and riverine erosion damage to increase landslide susceptible slope stability

- Encourage utility companies to evaluate and harden vulnerable infrastructure elements for sustainability
- Maintain and update erosion hazard locations, identify critical facilities potentially impacted, and develop mitigation initiatives such as bank stabilization or facility relocation to prevent or reduce threat
- Develop mitigation initiatives such as riprap, sheet pilings, gabion baskets, articulated matting, concrete, asphalt, vegetation, or other armoring or protective materials to provide river bank protection
- Harden culvert entrance bottoms with asphalt, concrete, rock, or similar material to reduce erosion or scour
- Install walls at the end of drainage structure to prevent embankment erosion at its entrance or outlet
- The State of Alaska, DHS&EM estimates \$50K to \$100K required for technical assistance to develop project applications

The above-listed Unmet Needs exceeds the \$400K minimum threshold.

## 16. CITY OF DIOMEDE

### **Most Impacted and Distressed Threshold**

The target area identified as most impacted and distressed is the *City of Diomed*e as a result of the Presidentially-declared disaster DR-4050, which occurred in the eligible calendar year of 2011. Diomed is a second class city in the Nome Census Area, which was declared a Qualified Disaster area.

The City of Diomed exhibits Most Impacted Characteristics and Most Distressed Characteristics which affect the ability of the area to recover from DR-4050.

### ***Most Impacted Characteristics***

The City of Diomed meets the Most Impacted Characteristic of Environmental Degradation. The City of Diomed suffers from environmental degradation due to coastal erosion.

There are studies which address how ongoing erosion issues in Diomed, especially in conjunction with severe weather and flooding events, place housing, infrastructure and/or economic revitalization at risk.

The USACE Alaska Baseline Erosion Assessment, Erosion Information Paper-Diomed, Alaska, December 9, 2007

([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Diomed\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Diomed_Final%20Report.pdf)) states that the City of Diomed's coast is eroded by the Bering Sea due to high tides, fall storm surges, wind and waves, melting permafrost, and late forming coastal sea ice.

In response to a request from Department of Homeland Security (DHS)/FEMA, the State of Alaska Department of Natural Resources(DNR)/Division of Geological and Geophysical Surveys (DGGS) Coastal Hazards Geologist conducted a net erosion calculation associated with the November 2013 storm (qualifying event DR-4162) along the old runway/evacuation route in Shaktoolik (qualifying target area). The report quantified the net shoreline retreat along the old runway/evacuation route in



meters of shoreline lost inland in some vertical transects and area lost. See Most Impacted Section under Target Community Shaktoolik (10 of 16) for Shaktoolik analysis results. The State of Alaska CDBG-DR Interagency Working Group has requested a similar analysis for DR-4050 for Diomedes.

### ***Most Distressed Characteristics***

Diomedes meets the Most Distressed Characteristics of: Disaster impacted low- and moderate-income households; Disaster impacted an economically fragile area; and Disaster impacted an area with prior documented environmental distress.

Reference [www.HUDUSER.org/CBDGRDR/AppendixD](http://www.HUDUSER.org/CBDGRDR/AppendixD), the City of Diomedes meets the Disaster impacted low-and moderate-income threshold (96% low mod percentage).

The City of Diomedes is the area inhabited by members of the federally-recognized tribe the Native Village of Diomedes. Additionally, the City is located in the Nome Census Area, with an unemployment rate of 13% (August 2014), well above 125% of the national average employment rate of 6.1% (August 2014).

The City of Diomedes has been identified by the Imperiled Community Water Resources Analysis ([http://www.climatechange.alaska.gov/docs/iaw\\_tt\\_imperiled\\_h2o\\_30jun10.pdf](http://www.climatechange.alaska.gov/docs/iaw_tt_imperiled_h2o_30jun10.pdf)) as a community likely to experience “near term climate change impacts to their water and wastewater infrastructure.”

The USACE Alaska Baseline Erosion Assessment (<http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/AlaskaBaselineErosionAssessmentBEAMainReport.pdf>) assigned the City of Diomedes a “Monitor Conditions” status and stated while erosion impacts may not affect the viability of the community, erosion impacts may warrant Federal, State or other intervention.

The USACE Alaska Baseline Erosion Assessment, Erosion Information Paper-Diomedes, Alaska, December 9, 2007 ([http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Diomedes\\_Final%20Report.pdf](http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/Diomedes_Final%20Report.pdf)) states the City of Diomedes’s coast is eroded by the Bering Sea due to high tides, fall storm surges, wind and waves, melting permafrost, and late forming coastal sea ice. The survey reported major erosion events in 1990, 2004, and 2005. The report notes that some structures and community facilities are within 100 feet of the erosion area including residences, water tanks, roads, boat launch/storage/repair sites, significant cultural and archeological sites, schools, clinics, and storage facilities. The community had a gabion wall constructed in 2003 at a cost of \$55K. However, the wall is apparently in need of repair.

### **Unmet Recovery Needs Threshold**

The City of Diomedes has Unmet Recovery Needs, meaning needs that have not been addressed by federal, state, or other sources, in the area(s) identified in this letter as “most impacted and distressed.” The City of Diomedes has not had a previous allocation of CDBG Disaster Recovery funds in response to major disasters in 2011, 2012, or 2013.

The City of Diomedes meets the Unmet Needs criteria category of Environmental Degradation.

During the qualifying disaster event DR-4050, the area suffered from damage due to inundation by high water and high winds. The ongoing erosion issues which are exacerbated during disaster events place housing, infrastructure, and economic revitalization at risk.

The USACE Baseline Assessment for Diomedes notes that some structures and facilities were observed to be less than 100 feet from the eroding shoreline. According to the community survey, some of these structures at risk include residences, water tanks, fuel tanks, road, boat launch and storage facilities, sites of significant cultural or archeological value, schools, clinics, and churches. These structures would be potential candidates for relocation and elevation. Additionally, undefined erosion control measures to protect the community are unspecified but costly.

The City of Diomedes is scheduled for FEMA-approved local hazard mitigation plan development in 2014.

These Unmet Needs exceed the \$400K threshold.

## CONCLUSION

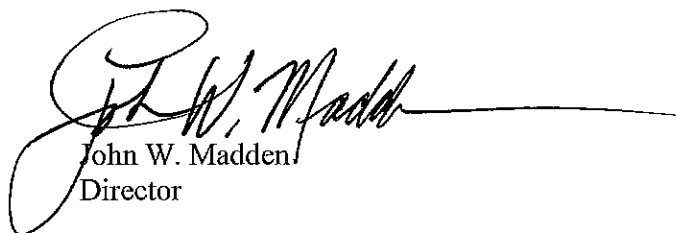
The State of Alaska respectfully submits the aforementioned 16 Alaska communities for consideration of CDBG-DR threshold request. Thank you for considering this submission. We look forward to your evaluation of our submission.

Please send your response to:

Ann Y. Gravier  
ann.gravier@alaska.gov  
907-428-7045  
State Hazard Mitigation Officer  
Division of Homeland Security and Emergency Management

You may also contact Ann Gravier if you have technical difficulty accessing the links and other data provided in this letter.

Sincerely,



John W. Madden  
Director