

ADDENDUM MATERIALS

Multi-Jurisdictional Hazard Mitigation Plan

February 8, 2021



Fairbanks North Star Borough

DEPARTMENT OF COMMUNITY PLANNING

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MEMORANDUM

TO: Fairbanks North Star Borough Planning Commission

THROUGH: D. Christine Nelson, Director
Department of Community Planning

FROM: Nancy Durham, Flood Plain Administrator
Department of Community Planning *ND*

DATE: February 9, 2021

SUBJECT: Consistency of Multi-Jurisdictional Hazard Mitigation Plan (HMP) Update
with the FNSB Regional Comprehensive Plan

This memo analyzes the applicable goals, strategies and actions of the FNSB Regional Comprehensive Plan as they pertain to the FNSB's updated goals, objectives and actions.

Environment

GOAL 3 To protect natural systems.

Strategy 7: Consider land development toward areas where natural systems will be least adversely affected.

Action A: Define and identify areas with severe natural hazards.

- **Modify Title 17 and 18 to minimize development in areas with severe natural hazards and, where unavoidable, ensure that it proceeds with precautions essential to avoid unnecessary public and/or private costs.**
- **Zone properties in accordance with natural hazards such as soil types, slope and aspect, incidence of flooding, and presence of ice-rich permafrost and other items detrimental to development.**
- **Create incentives for environmentally sensitive uses of natural hazard areas.**
- **Update Title 15 Floodplain Ordinance to be consistent with current FEMA regulations.**



- **Update the federal insurance rate maps for the FNSB.**

The HMP protects natural systems through land development with the following objectives, goals and actions:

Objective W-4: Address wildland interface issues. Action A: Create a hazard notification process for people intending to build in areas with dense Black Spruce.

Objective W-5: Complete wildfire mitigation projects. Action A: Plan for and require fire breaks on the perimeter of residential areas vulnerable to wildfires.

Objective E-1: Discourage development where soils are prone to settling, sliding, shaking violently or liquefying. Prevent building on top of active faults. Action B: Update Title 18.

Objective F-1: Update Title 15 Floodplain Ordinances. Action A: Update the Ordinance to comply with NFIP requirements.

Objective F-2: Update FIRM Maps. Action A: Digitize, update and revise existing flood insurance rate maps. Action B: Continue efforts as a Co-operating Technical Partner within the NFIP.

Objective F-3: Educate the public and encourage public involvement in flood hazard prevention activities. Action D: Partner with Army Corps of Engineers, NRCS, and Rosie Creek and Salcha area residents to conduct a flood mitigation feasibility study on the Tanana River.

GOAL MH 2: Integrate community plans, mitigation goals, and initiatives throughout Fairbanks North Star Borough, City of Fairbanks, and City of North Pole planning processes and projects. Action MH 2.1: Jurisdictions will coordinate, attempt to incorporate, and integrate mitigation planning provisions into community planning processes such as comprehensive, capital improvement, and land use plans, etc. to demonstrate multi-benefit considerations and facilitate using multiple funding source consideration. Action MH 2.4: Document natural hazard high-risk areas in land-use, zoning, emergency response, and evacuation plans. (e.g., flood, ground failure, wildfire, etc.) including update of the Land Suitability Analysis.

GOAL FL 7: Reduce potential riverine flood (FL) and streambank erosion vulnerability, damage, and loss. Action FL 7.1: Maintain a prioritized list of potential flood-damaged or impacted structures and prepare grant applications for FEMA funded programs.

It is imperative that areas with severe natural hazards are documented and development regulated and/or restricted. This protects the public's health, safety and property. Land development where natural systems include severe natural hazards requires safety measures as proposed in the HMP.

Action B: Prevent or minimize damage to environmentally sensitive areas.

The HMP prevents or minimizes damage to environmentally sensitive areas with the following objectives, goal and actions:

Objective W-3: Participate in the outdoor burn program for residents. Action A: Annually review notification and response procedures.

Objective E-1: Discourage development where soils are prone to settling, sliding, shaking violently or liquefying. Prevent building on top of active faults. Action A: Support State and Federal soil surveys to determine where shaking will be the strongest and showing the relative chances of earthquake-induced ground failure. Action B: Update Title 18.

Objective F-4: Maintain, enhance and conserve vegetation preferably natural, along transportation corridors, rivers, lakes and ponds to preserve scenic beauty, prevent erosion and support wildlife. Promote open spaces. Action A: Continue to protect riparian zones by imposing restrictions on properties at time of re-zoning. Action B: Continue to address preserving riparian zones as outlined in the FNSB Comprehensive Plan.

GOAL FL 7: Reduce potential riverine flood (FL) and streambank erosion vulnerability, damage, and loss. Action FL 7.3: Maintain, enhance and conserve vegetation preferably natural, along transportation corridors, rivers, lakes and ponds to preserve scenic beauty, prevent erosion and support wildlife. Promote open spaces.

The Borough can prevent or minimize damage to environmentally sensitive areas by directing development towards areas where natural systems will be least adversely affected.

Strategy 9: Support efforts to protect waterways.

Action A: Develop a riparian plan for the Borough's waterways that will:

- **Protect riparian habitat by establishing riparian zones.**
- **Replace existing Outdoor Recreational zoning along waterways with appropriate zones.**

■ Limit erosion along waterways.

The HMP promotes natural systems to protect waterways through riparian habitat with the following objective, goal and actions:

Objective F-4: Maintain, enhance and conserve vegetation preferably natural, along transportation corridors, rivers, lakes and ponds to preserve scenic beauty, prevent erosion and support wildlife. Promote open spaces. Action A: Continue to protect riparian zones by imposing restrictions on properties at time of re-zoning. Action B: Continue to address preserving riparian zones as outlined in the FNSB Comprehensive Plan.

GOAL FL 7: Reduce potential riverine flood (FL) and streambank erosion vulnerability, damage, and loss. Action FL 7.3: Maintain, enhance and conserve vegetation preferably natural, along transportation corridors, rivers, lakes and ponds to preserve scenic beauty, prevent erosion and support wildlife. Promote open spaces.

Riparian habitat and natural vegetation along waterways allow for decreased erosion to properties along the waterways and increased fish habitat. FNSBC Title 18 created an Outdoor Recreational Zone, Water Setback Overlay Zone and Water Protection Overlay Zone to help protect the Borough waterways.

Strategy 10: Borough public land and open spaces.

Action A: Identify and provide public borough land for open spaces that can maintain, enhance and conserve outdoor recreational opportunities, wildlife, marginal lands, drainage areas, linkage between existing public open spaces, natural vegetative areas near urban development, public open spaces along transportation corridors between borough communities, tourism opportunities.

The HMP promotes natural systems of public land and open spaces with the following objectives, goals and actions:

Objective W-3: Participate in the outdoor burn program for residents. Action A: Annually review notification and response procedures.

Objective F-4: Maintain, enhance and conserve vegetation preferably natural, along transportation corridors, rivers, lakes and ponds to preserve scenic beauty, prevent erosion and support wildlife. Promote open spaces. Action A: Continue to protect riparian zones by imposing restrictions on properties at time of re-

zoning. Action B: Continue to address preserving riparian zones as outlined in the FNSB Comprehensive Plan.

GOAL FL 7: Reduce potential riverine flood (FL) and streambank erosion vulnerability, damage, and loss. Action FL 7.3: Maintain, enhance and conserve vegetation preferably natural, along transportation corridors, rivers, lakes and ponds to preserve scenic beauty, prevent erosion and support wildlife. Promote open spaces.

GOAL WF 10: Reduce potential wildland fire (WF) vulnerability, damage, and loss. Action WF 10.1: Leverage grant funding to continue fuel treatment projects on public land to protect exposures in Zones of Concern.

Storm water and runoff need somewhere to go. Open space and public land provide a filtration system for runoff and creates an area for flood waters, recreation and wildlife to rest, eat and drink.

GOAL 2 To promote responsible stewardship of the Borough ecosystem.

Strategy 2: Maintain favorable air and water quality in the community.

Action C: Advocate for reasonable application of wetlands regulations by the Corps of Engineers and other federal and state agencies.

The HMP promotes stewardship of the Borough ecosystem through reasonable application of wetlands with the following objective and actions:

Objective F-4: Maintain, enhance and conserve vegetation preferably natural, along transportation corridors, rivers, lakes and ponds to preserve scenic beauty, prevent erosion and support wildlife. Promote open spaces. Action A: Continue to protect riparian zones by imposing restrictions on properties at time of re-zoning. Action B: Continue to address preserving riparian zones as outlined in the FNSB Comprehensive Plan.

Wetlands create a habitat for fish, wildlife and birds and absorbs flood waters, which prevents flood damage. Protecting riparian zones in these habitats help maintain the balance of the ecosystem and allows fishing and hunting opportunities for residents.

Strategy 5: Seek mitigation opportunities to balance development and preservation goals.

The HMP promotes stewardship of the Borough ecosystem through mitigation measures that balance development and preservation goals with the following objectives, goals and actions:

Objective W-5: Complete wildfire mitigation projects. Action A: Plan for and require fire breaks on the perimeter of residential areas vulnerable to wildfires.

Objective E-6: Complete seismic mitigation projects. Action A: Structurally retrofit critical facilities to make them more resistant to seismic activity, ground motion and soil failure due to earthquakes. Action B: Brace critical equipment such as emergency/back-up generators and infrastructure. Action C: Construct temporary structure to house critical emergency vehicles in the event of earthquake damage to public facilities (police, fire, utilities). Action D: Stockpile critical repair parts for fire transmission water.

Objective F-3: Educate the public and encourage public involvement in flood hazard prevention activities. Action D: Partner with Army Corps of Engineers, NRCS, and Rosie Creek and Salcha area residents to conduct a flood mitigation feasibility study on the Tanana River.

Objective F-8: Complete flood mitigation projects. Action A: Examine mitigation options that may be available and feasible for properties listed on the Repetitive Loss (RL) List. Action C: Within the 100-year floodplain, replace buried underground fuel storage tanks with above ground storage tanks. Action D: Upgrade the capacity of the sump pumps in utilidors and lift stations to better protect utilities during a flood event. Action E: Upgrade the storm drain system in areas of the FNSB where intense rain events lead to localized flooding, such as adding new culverts and inlets and/or increasing the pipe sizes to accept a larger volume of runoff.

GOAL MH 1: Provide outreach activities to educate and promote recognition and mitigation of natural hazards that affect the Fairbanks North Star Borough.

Action MH 1.5: Encourage non-structural mitigation and preparedness activities using an all-hazards approach.

Action MH 4.3: Complete hazard assessments and prioritize at-risk populations and infrastructure for all hazard types such as flood, erosion, ground failure, wildfire, etc., including update of the Land Suitability Analysis.

GOAL FL 7: Reduce potential riverine flood (FL) and streambank erosion vulnerability, damage, and loss. Action FL 7.1: Maintain a prioritized list of potential flood-damaged or impacted structures and prepare grant applications for FEMA funded programs. Action FL 7.3: Maintain, enhance and conserve vegetation preferably natural, along transportation corridors, rivers, lakes and

ponds to preserve scenic beauty, prevent erosion and support wildlife. Promote open spaces.

GOAL WF 10: Reduce potential wildland fire (WF) vulnerability, damage, and loss. Action WF-10.1: Leverage grant funding to continue fuel treatment projects on public land to protect exposures in Zones of Concern.

It is vital to balance development and preservation. The Borough conducts outreach programs and utilizes mitigation techniques as described in the HMP. Alaska residents enjoy the outdoors. New development can impact natural systems and cause land use conflicts amongst community interests. Mitigation strategies that balance preservation with development opportunities may result in fewer conflicts.

The HMP is consistent with the FNSB Regional Comprehensive Plan for the Environment, GOAL 2 (To promote responsible stewardship of the Borough ecosystem) and GOAL 3 (To protect natural systems) because the HMP proposes actions for addressing interface issues; discouraging development in severe natural hazard areas, updating ordinances, plans and regulations; educating the public; encouraging public involvement; maintaining, enhancing and conserving open space; completing mitigation projects; completing hazard assessments; and prioritizing at-risk populations and infrastructure for the ecosystem and natural systems.

Community and Human Resources

GOAL 1 To have services and facilities that enrich the quality of life for all residents.

Strategy 2: Enhance public safety.

Action A: Maintain public safety services including the following:

- **Emergency operations plans.**
- **Animal control services.**
- **Fire protection.**
- **Emergency Medical System (EMS).**
- **Hazardous material emergency response operations.**
- **Police protection.**

Action B: Encourage cooperation of public safety agencies.

- **Provide orderly delivery of services.**
- **Develop efficient expanded services.**
- **Function in an emergency.**
- **Coordinate programs of volunteer organizations that improve public safety.**

● **Improve Insurance Services Organization (ISO) ratings throughout the Borough.**

The HMP protects the public health and safety by enhancing public safety services and cooperation of public safety agencies with the following objective, goal and actions:

Objective W-1: Utilize the FNSB, City of Fairbanks and City of North Pole EOPs and Emergency Operation Centers (EOCs) to support wildfire operations. Action B: Critique use of EOC following activation and identify improvement opportunities.

Objective E-2: Conduct seismic strength evaluations for critical facilities and infrastructure. Identify funding sources to upgrade them to meet current seismic standards.

Objective S-1: Educate and inform the public about severe weather hazards, including winter weather driving. Action A: Utilize Public Service Announcements during severe weather to foster personal preparedness and safety. Action B: Utilize Borough website and available media to provide timely information on winter hazards.

Objective S-2: Maintain and update resource lists and mobility plan to buses, portable generators, portable heating devices, shelters and fuel caches. Action A: Inventory the cache resources currently available. Action B: As appropriate, obtain Memorandum of Understandings (MOUs) with participating agencies.

Objective S-4: Follow school policies when ice fog and/or freezing rain cause severe driving hazards. Action A: Conduct an annual review of school district policies on ice fog and freezing rain prior to the beginning of the school year.

Objective F-5: Identify critical Borough and City infrastructure and facilities located in flood hazard areas. Determine viable mitigation measures and secure funding. Action B: Conduct a feasibility study.

GOAL MH 2: Integrate community plans, mitigation goals, and initiatives throughout Fairbanks North Star Borough, City of Fairbanks, and City of North Pole planning processes and projects. Action MH 2.2: Update to the current IBC and enforce commercial and residential construction.

It is important to coordinate services and emergency response during a disaster. It is also important to critique what worked and did not work after a disaster. This allows for revisions to regulations and plans, along with improving communications between government agencies, public and private sectors, and non-governmental organizations.

Action C: Enhance fire prevention outside city limits through education, voluntary inspections and improved information on construction standards.

The HMP promotes services and facilities that protect the public health and safety and enriches the quality of life through enhanced fire prevention with the following objectives, goal and actions:

Objective W-2: Adopt Firewise as the preventative education program for the FNSB and North Pole. Action A: Encourage fire proofing of residences, including the installation of sprinkler systems. Action B: Distribute educational materials about defensible space.

Objective W-4: Address wildland interface issues. Action A: Create a hazard notification process for people intending to build in areas with dense Black Spruce.

Objective W-5: Complete wildfire mitigation projects. Action A: Plan for and require fire breaks on the perimeter of residential areas vulnerable to wildfires.

GOAL WF 10: Reduce potential wildland fire (WF) vulnerability, damage, and loss. Action WF 10.1: Leverage grant funding to continue fuel treatment projects on public land to protect exposures in Zones of Concern. Action WF 10.2: Determine the feasibility of rewarding specific WUI homeowner mitigation activities (Firewise, Construction Standards, Home Sprinklers, Reducing Ladder Fuels, etc.) with partial property tax exemptions. Action WF 10.3: Complete Phase III of CWPP to include reevaluating Zones of Concern, FlamMap, vegetation, etc. to account for model improvements, recent development, weather probability, new burn scars, etc. including update of the Land Suitability Analysis.

Wildfires is one of the top hazards in the Borough. There is a need to educate property owners on how to manage their properties to help keep wildfires at bay and to decrease property loss. It is also beneficial to have systems in place as designated in the HMP on how to notify property owners about the conditions surrounding their property during a wildfire emergency.

Action D: Encourage education of life safety issues.

- **Coordinate with schools to provide life safety education to children.**
- **Educate the public about the content of FNSB Emergency Operations Plan.**
- **Provide the benefits of residential building code adoption for fire prevention.**

The HMP promotes services and facilities that protect the public health and safety and enrich the quality of life through education on life safety issues with the following objectives, goals and actions:

Objective M-4: Develop and implement multi-hazard education and outreach programs. Action A: Create a school program to teach children about 72-hour supplies, egress, and other preparedness.

Objective W-2: Adopt Firewise as the preventative education program for the FNSB and North Pole. Action A: Encourage fire proofing of residences, including the installation of sprinkler systems. Action B: Distribute educational materials about defensible space.

Objective E-3: Implement current seismic standards for new construction. Action A: Support the development of a statewide uniform seismic code. Action B: Continue to use the IBC. Action C: Continue to meet or exceed insurance carrier seismic requirements.

Objective E-4: Encourage reduction of non-structural and structural hazards in homes, schools, businesses and government offices. Action A: Participate in earthquake mitigation workshops and presentations. Action B: Distribute earthquake mitigation preparedness information at fairs and on the FNSB website.

Objective S-1: Educate and inform the public about severe weather hazards, including winter weather driving. Action A: Utilize Public Service Announcements during severe weather to foster personal preparedness and safety. Action B: Utilize Borough website and available media to provide timely information on winter hazards.

Objective S-4: Follow school policies when ice fog and/or freezing rain cause severe driving hazards. Action A: Conduct an annual review of school district policies on ice fog and freezing rain prior to the beginning of the school year.

Objective F-3: Educate the public and encourage public involvement in flood hazard prevention activities. Action A: Continue to provide flood insurance information at time of application for zoning permit. Action B: Continue flood insurance outreach through available media. Action C: Continue educational presentations for builders, realtors.

GOAL MH 1: Provide outreach activities to educate and promote recognition and mitigation of natural hazards that affect the Fairbanks North Star Borough. Action MH 1.1: Host workshops for builders to teach or demonstrate new multi-

hazard construction techniques. (e.g., seismic, flood, ground failure, weather, wildfire, etc.) Action MH 1.2: Provide readily available locational hazard risk information to the public. (e.g., seismic, flood, ground failure, weather, wildfire, etc.) Action MH 1.3: Continue all-hazard focused safety education and preparedness in schools. Action MH 1.4: Educate community members about the benefits of the NFIP, Storm Ready, and Firewise programs.

*GOAL MH 3: Promote construction activities that reduce potential natural hazard damages and losses to support initiatives, such as National Flood Insurance Program participation and Repetitive Loss property mitigation, etc. Action MH 3.2: Promote development practices that reduce the flood risk (i.e., relocation, elevate at least 2 feet above base flood elevation (BFE), or buy-out property). *Purchased property deeds "must be" restricted for open space uses for perpetuity to keep people from rebuilding in known hazard areas.*

GOAL MH 2: Integrate community plans, mitigation goals, and initiatives throughout Fairbanks North Star Borough, City of Fairbanks, and City of North Pole planning processes and projects. Action MH 2.2: Update to the current IBC and enforce commercial and residential construction.

GOAL WX 9: Reduce potential severe weather (WX) vulnerability, damage, and loss. Action WX 9.1: Maintain StormReady® status through redundant warning and emergency information notifications and community-wide dissemination.

Life safety education for both adults and children are fundamental for protecting the public health, safety, welfare and the property of residents. The Borough organizes several types of outreach and trainings throughout the year as identified in the HMP.

Action E: Develop a public safety services comprehensive funding plan for:

- **Personnel.**
- **Facilities.**
- **Equipment.**
- **Training.**

The HMP promotes services and facilities that protect public health and safety and enrich the quality of life through funding public safety services with the following objectives, goal and actions:

Objective M-8: Complete multi-hazard mitigation projects for redundancy in public services and utilities. Action A: Supply critical facilities with backup heating and power systems, if they currently do not have one, or upgrades to existing systems as needed. Action B: Purchase portable water purification equipment. Action C: Install emergency generators for water pumping and

treatment facilities. Action D: Install emergency generators for sewer lift stations. Action E: Create a local government supply of portable backup generators.

Objective E-2: Conduct seismic strength evaluations for critical facilities and infrastructure. Identify funding sources to upgrade them to meet current seismic standards. Action C: Secure funding.

Objective F-5: Identify critical Borough and City infrastructure and facilities located in flood hazard areas. Determine viable mitigation measures and secure funding. Action C: Secure funding.

GOAL MH 4: Seek funding opportunities for hazard mitigation actions and projects; community planning; and project implementation. Action MH 4.1: Identify and pursue funding opportunities to implement mitigation actions. Action MH 4.2: Fund multi-hazard hazard mitigation retrofits projects for public facilities. Action MH 4.3: Complete hazard assessments and prioritize at-risk populations and infrastructure for all hazard types such as flood, erosion, ground failure, wildfire, etc., including update of the Land Suitability Analysis.

Disasters can occur at any time, securing funding for emergency supplies, equipment, training, personnel, facilities, infrastructure and mitigation projects is essential for the community. The Borough must be prepared for these disasters to keep the public safe and keep the economy running.

Strategy 4: Assess and plan for future community service needs.

Action A: Conduct research and planning to meet future needs.

- **Develop information for the public about the relative costs of providing services throughout the Borough.**
- **Research aging population demands on housing, health care and assisted living needs.**
- **Maintain the Borough function that tracks broad community indicators.**

The HMP promotes services and facilities that protect public health and safety and enrich the quality of life through research and planning with the following objectives, goals and actions:

Objective E-2: Conduct seismic strength evaluations for critical facilities and infrastructure. Identify funding sources to upgrade them to meet current seismic standards. Action B: Conduct a feasibility study.

Objective F-3: Educate the public and encourage public involvement in flood hazard prevention activities. Action D: Partner with Army Corps of Engineers, NRCS, and Rosie Creek and Salcha area residents to conduct a flood mitigation feasibility study on the Tanana River.

Objective F-5: Identify critical Borough and City infrastructure and facilities located in flood hazard areas. Determine viable mitigation measures and secure funding. Action B: Conduct a feasibility study.

GOAL MH 2: Integrate community plans, mitigation goals, and initiatives throughout Fairbanks North Star Borough, City of Fairbanks, and City of North Pole planning processes and projects. Action MH 2.4: Document natural hazard high-risk areas in land-use, zoning, emergency response, and evacuation plans. (e.g., flood, ground failure, wildfire, etc.) including update of the Land Suitability Analysis.

GOAL MH 4: Seek funding opportunities for hazard mitigation actions and projects; community planning; and project implementation. Action MH 4.3: Complete hazard assessments and prioritize at-risk populations and infrastructure for all hazard types such as flood, erosion, ground failure, wildfire, etc., including update of the Land Suitability Analysis.

Completing assessments of Borough resources, land suitability, critical facilities, and infrastructure provides awareness to the Borough and community. It also helps the Borough to plan for future community service needs.

Action B: Provide quality and economical public services facilities that:

- Fully utilize and maintain existing facilities.
- Provide for compatible joint use of facilities.
- Replace antiquated and wasteful facilities.
- Build new space to accommodate needs.
- Develop satellite service centers in areas of high population density.
- Improve accessibility to all public facilities (i.e. ADA guidelines).

The HMP promotes services and facilities that protects public health and safety and enrich the quality of life through public service facilities with the following objectives, goals and actions:

Objective M-8: Complete multi-hazard mitigation projects for redundancy in public services and utilities. Action A: Supply critical facilities with backup heating and power systems, if they currently do not have one, or upgrades to

existing systems as needed. Action B: Purchase portable water purification equipment. Action C: Install emergency generators for water pumping and treatment facilities. Action D: Install emergency generators for sewer lift stations. Action E: Create a local government supply of portable backup generators.

Objective E-3: Implement current seismic standards for new construction. Action A: Support the development of a statewide uniform seismic code. Action B: Continue to use the IBC. Action C: Continue to meet or exceed insurance carrier seismic requirements.

Objective E-4: Encourage reduction of non-structural and structural hazards in homes, schools, businesses and government offices. Action C: Participate in FNSB School District program for preparing school buildings for earthquakes (securing file cabinets, computers, etc.).

Objective E-6: Complete seismic mitigation projects. Action A: Structurally retrofit critical facilities to make them more resistant to seismic activity, ground motion and soil failure due to earthquakes. Action B: Brace critical equipment such as emergency/back-up generators and infrastructure. Action C: Construct temporary structure to house critical emergency vehicles in the event of earthquake damage to public facilities (police, fire, utilities). Action D: Stockpile critical repair parts for fire transmission water.

Objective S-4: Follow school policies when ice fog and/or freezing rain cause severe driving hazards. Action A: Conduct an annual review of school district policies on ice fog and freezing rain prior to the beginning of the school year.

Objective S-5: Complete severe weather mitigation projects. Action A: Install safety film on windows of critical facilities to protect them breaking (and injuring building occupants) and creating openings (where building heat will be lost) during severe weather and/or seismic events.

Objective F-8: Complete flood mitigation projects. Action A: Examine mitigation options that may be available and feasible for properties listed on the Repetitive Loss (RL) List. Action C: Within the 100-year floodplain, replace buried underground fuel storage tanks with above ground storage tanks. Action D: Upgrade the capacity of the sump pumps in utilidors and lift stations to better protect utilities during a flood event. Action E: Upgrade the storm drain system in areas of the FNSB where intense rain events lead to localized flooding, such as adding new culverts and inlets and/or increasing the pipe sizes to accept a larger volume of runoff.

GOAL MH 1: Provide outreach activities to educate and promote recognition and mitigation of natural hazards that affect the Fairbanks North Star Borough.

Action MH 1.5: Encourage non-structural mitigation and preparedness activities using an all-hazards approach.

GOAL MH 4: Seek funding opportunities for hazard mitigation actions and projects; community planning; and project implementation. Action MH 4.2: Fund multi-hazard hazard mitigation retrofits projects for public facilities.

Public facilities provide locations for the public to obtain services, conduct business, recreate, socialize and interact. These facilities require funding to construct them to current industry standards, to maintain them, and mitigate them appropriately.

GOAL 4 To maximize citizen involvement in all aspects of our community.

Strategy 9: Encourage citizen participation in governmental affairs.

Action B: Support individual volunteers in the local governments.

- **Provide training opportunities for government volunteers.**
- **Conduct an annual recognition program for government volunteers.**

The HMP maximizes citizen involvement and encourages citizen participation through supporting individual volunteers with the following goal and actions:

GOAL WX 9: Reduce potential severe weather (WX) vulnerability, damage, and loss. Action WX 9.1: Maintain StormReady® status through redundant warning and emergency information notifications and community-wide dissemination. Action WX 9.2: Train community volunteers to perform as: all-season Storm Spotter, Riverwatch, weather observers, and NWS HAM radio operators (quarterly). Action WX 9.3: Increase local organization participation in the Weather-Ready Nation Ambassadors Program.

There are several volunteer organizations for citizens to get involved with in the community to assist during and after a disaster. These volunteers are vetted and trained. These volunteer assignments can be as easy as measuring the rainfall/snowfall on their property to more complex as soliciting, collecting and distributing donations. The HMP public involvement plan includes a variety of opportunities to comment on the HMP's goals and objectives.

The HMP is consistent with the FNSB Regional Comprehensive Plan for Community and Human Resources, GOAL 1 (To have services and facilities that enrich the quality of life for all residents) and GOAL 4 (To maximize citizen involvement in all aspects of our

community) because the HMP proposes actions for evaluating critical facilities; educating and informing public; maintaining and updating resource lists; following policies; identifying critical infrastructure and facilities; integrating plans, mitigation goals and initiatives; adopting preventative education programs; addressing interface issues; completing mitigation projects; developing and implementing education and outreach projects; adopting preventative education programs; implementing construction standards; and maximize citizen involvement.

Land Use Goals

GOAL 2 To continue public land use and sales programs.

Strategy 4: Plan for, designate, and retain sufficient lands for future public purposes prior to the sales of public lands.

Action A: Encourage early selection of land for public purposes in areas designated for urban and residential growth.

- **Identify, acquire, or retain sites appropriate for public facilities and trails:**
- **Retain public lands that are unsuitable for development with present technology but that may improve with future technological changes.**

The HMP promotes public land use and sales through encouraging early selection of appropriate land for future public purposes with the following objectives, goal and actions:

Objective M-9: Ensure food security during extended events. Action A: Create opportunities and develop regulations to allow for more local agricultural production.

Objective E-1: Discourage development where soils are prone to settling, sliding, shaking violently or liquefying. Prevent building on top of active faults. Action A: Support State and Federal soil surveys to determine where shaking will be the strongest and showing the relative chances of earthquake-induced ground failure. Action C: Request that UAF Geophysical Institute conducts a presentation of FNSB geology and soils using the existing hazard map.

Objective E-6: Complete seismic mitigation projects. Action A: Structurally retrofit critical facilities to make them more resistant to seismic activity, ground motion and soil failure due to earthquakes. Action B: Brace critical equipment such as emergency/back-up generators and infrastructure.

Objective F-8: Complete flood mitigation projects. Action C: Within the 100-year floodplain, replace buried underground fuel storage tanks with above ground storage tanks. Action D: Upgrade the capacity of the sump pumps in utilidors and lift stations to better protect utilities during a flood event. Action E: Upgrade the storm drain system in areas of the FNSB where intense rain events lead to localized flooding, such as adding new culverts and inlets and/or increasing the pipe sizes to accept a larger volume of runoff.

GOAL MH 2: Integrate community plans, mitigation goals, and initiatives throughout Fairbanks North Star Borough, City of Fairbanks, and City of North Pole planning processes and projects. Action MH 2.1.1: Establish policy to review and/or evaluate proposed public land sales for Hazard Exposures and require specific mitigation action for development in high hazard areas.

GOAL MH 3: Promote construction activities that reduce potential natural hazard damages and losses to support initiatives, such as National Flood Insurance Program participation and Repetitive Loss property mitigation, etc. Action MH 3.1: Develop a historical landslide, landslide prone, permafrost, and other soil instability locations inventory linked to specific ground failure hazard maps including update of the Land Suitability Analysis.

GOAL GF 8: Reduce potential ground failure (GF) vulnerability, damage, and loss. Action GF 8.1: Develop an inventory of historical landslides and landslide prone areas and produce location specific landslide, hillside erosion and subsidence hazard maps.

It is important for the Borough to select and retain land that is suitable for development and may be needed for future public purposes. It is crucial for the Borough to select and retain land that is unsuitable for development, but good for public use, prior to a public sale. This decreases future issues and losses for property owners.

GOAL 3 To have a variety of land uses that fit the diverse needs of the community.

Strategy 6: Provide for commercial land uses in both urban and non-urban areas.

Strategy 7: Provide a variety of residential land use opportunities.

Strategy 8: Provide for industrial land uses in both urban and non-urban areas.

GOAL 4 To enhance development opportunities while minimizing land use conflicts.

Strategy 10: Attract and support development that is compatible with and enhances existing land use.

The HMP promotes having a variety of land uses that fit the diverse needs of the community through commercial, residential and industrial land uses and enhances development opportunities while minimizing land use conflicts through supporting innovative land development and compatible land uses with the following objectives, goals and actions:

Objective M-9: Ensure food security during extended events. Action A: Create opportunities and develop regulations to allow for more local agricultural production.

Objective E-1: Discourage development where soils are prone to settling, sliding, shaking violently or liquefying. Prevent building on top of active faults. Action A: Support State and Federal soil surveys to determine where shaking will be the strongest and showing the relative chances of earthquake-induced ground failure. Action B: Update Title 18. Action C: Request that UAF Geophysical Institute conducts a presentation of FNSB geology and soils using the existing hazard map.

Objective W-2: Adopt Firewise as the preventative education program for the FNSB and North Pole. Action A: Encourage fire proofing of residences, including the installation of sprinkler systems. Action B: Distribute educational materials about defensible space.

Objective W-5: Complete wildfire mitigation projects. Action A: Plan for and require fire breaks on the perimeter of residential areas vulnerable to wildfires.

Objective F-2: Update FIRM Maps. Action A: Digitize, update and revise existing flood insurance rate maps. Action B: Continue efforts as a Co-operating Technical Partner within the NFIP.

Objective F-4: Maintain, enhance and conserve vegetation preferably natural, along transportation corridors, rivers, lakes and ponds to preserve scenic beauty, prevent erosion and support wildlife. Promote open spaces. Action A: Continue to protect riparian zones by imposing restrictions on properties at time of re-zoning. Action B: Continue to address preserving riparian zones as outlined in the FNSB Comprehensive Plan.

Objective F-6: Implement NFIP standards. Action A: Continue to make FIRM adjustments and refinements. Action B: Continue to educate staff and other cooperating agencies on NFIP regulations, policies, and procedures.

Objective F-7: Improve drainage on new construction projects. Action A: Require drainage planning for subdivisions.

GOAL MH 2: Integrate community plans, mitigation goals, and initiatives throughout Fairbanks North Star Borough, City of Fairbanks, and City of North Pole planning processes and projects. Action MH 2.1: Jurisdictions will coordinate, attempt to incorporate, and integrate mitigation planning provisions into community planning processes such as comprehensive, capital improvement, and land use plans, etc. to demonstrate multi-benefit considerations and facilitate using multiple funding source consideration. Action MH 2.4: Document natural hazard high-risk areas in land-use, zoning, emergency response, and evacuation plans. (e.g., flood, ground failure, wildfire, etc.) including update of the Land Suitability Analysis.

GOAL MH 3: Promote construction activities that reduce potential natural hazard damages and losses to support initiatives, such as National Flood Insurance Program participation and Repetitive Loss property mitigation, etc. Action MH 3.1: Develop a historical landslide, landslide prone, permafrost, and other soil instability locations inventory linked to specific ground failure hazard maps including update of the Land Suitability Analysis. Action MH 3.2: Promote development practices that reduce the flood risk (i.e., relocation, elevate at least 2 feet above base flood elevation (BFE), or buy-out property). *Purchased property deeds "must be" restricted for open space uses for perpetuity to keep people from rebuilding in known hazard areas.

GOAL FL 7: Reduce potential riverine flood (FL) and streambank erosion vulnerability, damage, and loss. Action FL 7.2: Promote development practices that reduce the flood risk (i.e., relocation, elevate at least 2 feet above BFE, or buy-out property). *Purchased property deeds "must be" restricted for open space uses for perpetuity to keep people from rebuilding in known hazard areas.

GOAL GF 8: Reduce potential ground failure (GF) vulnerability, damage, and loss. Action GF 8.1: Develop an inventory of historical landslides and landslide prone areas and produce location specific landslide, hillside erosion and subsidence hazard maps.

GOAL WF 10: Reduce potential wildland fire (WF) vulnerability, damage, and loss. Action WF 10.1: Leverage grant funding to continue fuel treatment projects on public land to protect exposures in Zones of Concern.

"One size fits all" does not well serve the needs of the general public. Individuals and businesses have different needs for what they are trying to accomplish. Properties

within the Borough have different size, topography, soils, and hazards. Having a variety of land uses in areas of suitable development is the best way to serve the community.

It is also important to educate the public on the hazards and regulations for their property, provide outreach on conservation and available mitigations, and improve infrastructure and protection measures.

The HMP is consistent with the FNSB Regional Comprehensive Plan for Land Use GOAL 2 (To continue public land use and sales programs), GOAL 3 (To have a variety of land uses that fit the diverse needs of the community), and GOAL 4 (To enhance development opportunities while minimizing land use conflicts) because the HMP proposes to discourage development in areas with severe natural hazards; complete mitigation projects; integrate plans, mitigation goals and initiatives; adopt preventative education programs; maintain, enhance and conserve open space; promote construction activities that reduce natural hazard damages and losses; update and implement standards and regulations; improve drainage projects, and encourage development of a variety of land uses that meet the diverse needs of the community while minimizing land use conflicts.

Transportation and Infrastructure

GOAL 1 To have a safe, efficient, multi-modal transportation system that anticipates community growth.

Strategy 1: Encourage location, design and maintenance of roads based on their function and community needs.

Action A: Update and maintain the Comprehensive Road Plan.

Action B: Revise Title 17 to:

- **Improve road standards.**
- **Ensure access for emergency service vehicles to new developments.**
- **Require public and private developers to provide adequate rights-of-way and road construction in conformance with Borough road standards.**

Action C: Ensure that road designs improve safety and minimize adverse impacts.

The HMP promotes having a safe, efficient, multi-modal transportation system that anticipates community growth through updating the Comprehensive Road Plan, revising Title 17 regulations, and ensuring road design improves safety and minimizes adverse impacts with the following objectives and actions:

Objective M-1: Develop additional egress routes and methods. Action A: Construct roads to provide redundant means of access, such as reconstruction of Transmitter Road on Eielson Air Force Base to Grange Hall Road in Two Rivers.

Objective M-7: Address issues of emergency access, including road grade, construction standards, and turnarounds. Action B: Widen roads and/or create turnarounds in residential areas to improve emergency vehicle access.

Objective F-6: Implement NFIP standards. Action B: Continue to educate staff and other cooperating agencies on NFIP regulations, policies, and procedures.

Objective F-7: Improve drainage on new construction projects. Action A: Require drainage planning for subdivisions.

Objective F-8: Complete flood mitigation projects. Action E: Upgrade the storm drain system in areas of the FNSB where intense rain events lead to localized flooding, such as adding new culverts and inlets and/or increasing the pipe sizes to accept a larger volume of runoff.

GOAL MH 2: Integrate community plans, mitigation goals, and initiatives throughout Fairbanks North Star Borough, City of Fairbanks, and City of North Pole planning processes and projects. Action MH 2.1: Jurisdictions will coordinate, attempt to incorporate, and integrate mitigation planning provisions into community planning processes such as comprehensive, capital improvement, and land use plans, etc. to demonstrate multi-benefit considerations and facilitate using multiple funding source consideration.

Disasters happen all over the Borough, many without warning. Multiple egresses allow residents to evacuate. Maintaining road standards and access allows emergency personnel to get to properties. Requiring and improving drainage systems decreases flooding. Educating emergency responders, FNSB staff, and the public on standards and regulations helps decrease chances of impact from hazards.

GOAL 2 To have sufficient public utilities and infrastructure to meet existing and future demands.

Strategy 6: Develop appropriate infrastructures that support all land use categories.

The HMP promotes having sufficient public utilities and infrastructure to meet existing and future demands through developing appropriate infrastructures with the following objectives and action:

Objective F-5: Identify critical Borough and City infrastructure and facilities located in flood hazard areas. Determine viable mitigation measures and secure funding.

Objective F-8: Complete flood mitigation projects. Action D: Upgrade the capacity of the sump pumps in utilidors and lift stations to better protect utilities during a flood event. Action E: Upgrade the storm drain system in areas of the FNSB where intense rain events lead to localized flooding, such as adding new culverts and inlets and/or increasing the pipe sizes to accept a larger volume of runoff.

Action MH 4.3: Complete hazard assessments and prioritize at-risk populations and infrastructure for all hazard types such as flood, erosion, ground failure, wildfire, etc., including update of the Land Suitability Analysis.

Utilities and infrastructure are critical. Regulations require access and standards for infrastructure. Mitigating existing utilities and infrastructure prior to a disaster allows for a faster recovery after a disaster. Conducting feasibility studies helps prioritize the order and areas for utilities and infrastructure that may fail.

The HMP is consistent with the FNSB Regional Comprehensive Plan for Transportation and Infrastructure GOAL 1 (To have a safe, efficient, multi-modal transportation system that anticipates community growth) and GOAL 2 (To have sufficient public utilities and infrastructure to meet existing and future demands) because the HMP proposes actions to address issues of emergency access; improve drainage projects; implement standards; complete mitigation projects; develop additional egress routes and methods; identify critical infrastructure and facilities; complete hazard assessments; prioritize at-risk populations and infrastructure; and evaluate critical facilities and infrastructure for safe, efficient, multi-modal transportation system and sufficient public utilities and infrastructure.

Economic Development

GOAL 1 To strengthen and expand the existing economy.

Strategy 4: Emphasize development and expansion of mining, local manufacturing, agriculture, tourism, conventions, hospitality and forest-related businesses.

Action B: Promote agriculture by:

- **Supporting non-profit and volunteer organizations that promote agricultural development within the Borough.**
- **Promoting and enhancing agricultural administration, processing, and distribution within the Borough.**

- **Support maintenance and further development of the University of Alaska’s agricultural programs.**
- **Maintaining and developing agricultural programs at the local schools.**
- **Support the building of storage facilities for agricultural products when we are assured that there is a need for them.**
- **Supporting the expansion of Tanana Valley Farmers Market and other local agricultural markets.**

Community and Human Resources

GOAL 1 To have services and facilities that enrich the quality of life for all residents.

Strategy 1: Provide for delivery of the essential human services for residents.

Action E: Encourage local food production.

The HMP strengthens and expands the existing economy through promoting agriculture and enriching the quality of life for all residents through essential human services with the following objective and actions:

Objective M-9: Ensure food security during extended events. Action A: Create opportunities and develop regulations to allow for more local agricultural production. Action B: Work with local grocers, transportation companies, and other partners to develop alternate plans for delivering foodstuffs.

The security of food production is important, especially since there are limited ways in which the community receives food from outside the Borough. The Borough is also a hub to distribute food to the surrounding villages.

The HMP is consistent with the FNSB Regional Comprehensive Plan for Economic Development GOAL 1 (To strengthen and expand the existing economy) and Community and Human Resources GOAL 1 (To have services and facilities that enrich the quality of life for all residents) because the HMP proposes actions for ensuring food security during extended events which protects the quality of life for all residents.

The HMP focuses on how hazards (i.e. cryosphere, seismic, flood, ground failure, severe weather, and wildland fire) impact socioeconomics, land use, transportation, utilities, health care, and emergency services. The HMP provides additional goals, strategies, and actions that help implement the FNSB Regional Comprehensive Plan. The HMP is consistent with the FNSB Regional Comprehensive Plan goals, strategies and actions.