FAIRBANKS CITY COUNCIL
AGENDA NO. 2026-16
REGULAR MEETING – AUGUST 24, 2026
MEETING WILL BE HELD VIA ZOOM WEBINAR AND AT
FAIRBANKS CITY COUNCIL CHAMBERS
800 CUSHMAN STREET, FAIRBANKS, ALASKA

REGULAR MEETING
6:30 p.m.

1. ROLL CALL

2. LAND ACKNOWLEDGEMENT: We respectfully acknowledge the Dena people upon whose traditional lands we reside. We honor the Dena who have been the stewards of Interior lands and waters for centuries, the Elders who lived here before, the Dena people of today, and future generations to come. We also recognize that Alaskan Native people would traditionally gather here and harvest Native foods.

3. INVOCATION

4. FLAG SALUTATION

5. CEREMONIAL MATTERS (Proclamations, Introductions, Recognitions, Awards)

6. CITIZENS' COMMENTS (oral communications to the City Council on items pertaining to City business that are not up for public hearing). The total comment period is up to one hour, and testimony is limited to three minutes. Any person wishing to speak needs to sign up on the list located in the hallway or must have signed up in advance using the procedures for providing online testimony found at the City's website. Respectful standards of decorum and courtesy should be observed by all speakers. Remarks should be directed to the City Council as a body rather than to any particular Councilmember or member of the staff. In consideration of others, please silence all cell phones and electronic devices.

7. APPROVAL OF AGENDA AND CONSENT AGENDA

   Consent agenda items are indicated by asterisks (*). Consent agenda items are considered together unless a councilmember requests that the item be returned to the general agenda. Ordinances on the approved consent agenda are automatically advanced to the next regular meeting for second reading and public hearing. All other items on the approved consent agenda are passed as final.

8. APPROVAL OF MINUTES OF PREVIOUS MEETINGS

9. SPECIAL ORDERS

a) The Fairbanks City Council will hear interested citizens concerned with the following alcohol license applications for renewal. Public testimony will be taken and limited to three minutes.

Lic. #	DBA	License Type	Licensee	Address
6069	Hari Om Cuisine of India	Restaurant/ Eating Place	A Paul, LLC	1528 S. Cushman Street
5927	Hyatt Place Fairbanks	Beverage Dispensary – Tourism	Fairbanks Hospitality, LLC	400 Merhar Avenue

10. REPORT FROM FAIRBANKS ALASKA NATIVE ORGANIZATIONS
(second meeting of every other month)

a) Interior Regional Housing Authority (IRHA), Eugene Paul

11. MAYOR'S COMMENTS AND REPORT

a) Special Reports

i) Downtown Summer Update from Shane Woolley, Just Cities Mayoral Fellowship

ii) H.E.A.R.T. Program Report from Brenda McFarlane

12. COUNCILMEMBERS' COMMENTS

13. UNFINISHED BUSINESS

14. NEW BUSINESS

*a) Resolution No. 5228 – A Resolution Adopting City of Fairbanks Records Retention Schedule Version 2.0. Sponsored by Mayor O'Neall.

*b) Resolution No. 5229 – A Resolution Adopting the Multi-Jurisdictional Hazard Mitigation Plan as the Official Mitigation Plan of the City of Fairbanks, Pending FEMA Approval. Sponsored by Mayor O'Neall.

*c) Resolution No. 5230 – A Resolution to Reopen Lacey Street Between First Avenue and Second Avenue by September 30. Sponsored by Councilmember Cleworth.

*d) Resolution No. 5231 – A Resolution Authorizing the City of Fairbanks to Apply for Funds from the Office on Violence Against Women (OVW) for the FFY2026 Local Law Enforcement Grants for Enforcement of Cybercrimes Program. Sponsored by Mayor O'Neall.

*e) Resolution No. 5232 – A Resolution Authorizing the Negotiation of Redevelopment at 123 Lacey Street. Sponsored by Mayor O'Neall.

15. WRITTEN COMMUNICATIONS TO THE CITY COUNCIL

16. COMMITTEE REPORTS AND COUNCILMEMBERS' COMMENTS

17. CITY CLERK'S REPORT

18. CITY ATTORNEY'S REPORT

19. EXECUTIVE SESSION

a) IBEW/COF Labor Negotiations: Guidance from Council [permissible under State law, including the provision at AS 44.62.310(c)(1)]

b) PSEA/COF Labor Negotiations: Guidance from Council [permissible under State law, including the provision at AS 44.62.310(c)(1)]

20. ADJOURNMENT

CITY OF FAIRBANKS
CITY CLERK'S OFFICE

800 Cushman Street
Fairbanks, AK 99701

Telephone (907) 459-6702
Fax (907) 459-6710

MEMORANDUM

TO: Mayor O'Neall and City Councilmembers

FROM: D. Danyielle Snider, MMC, City Clerk

SUBJECT: Alcohol License Renewal Applications

DATE: August 20, 2026

Notice has been received from the State Alcohol & Marijuana Control Office (AMCO) for the following alcohol license renewal applications:

Lic. #	DBA	License Type	Licensee	Address
6069	Hari Om Cuisine of India	Restaurant/ Eating Place	A Paul, LLC	1528 S. Cushman Street
5927*	Hyatt Place Fairbanks	Beverage Dispensary	Fairbanks Hospitality, LLC	400 Merhar Avenue

*License No. 5927 includes a hotel or motel endorsement. A hotel or motel endorsement authorizes the holder of a beverage dispensary license that is a hotel, motel, resort, or similar business premises to sell or serve alcoholic beverages on the licensed premises, including in a dining room, banquet room, and in guest rooms.

Pursuant to FGC Sec. 14-178 the Council may determine whether to protest alcohol license renewal applications after holding a public hearing. As required by FGC Sec. 14-167(b), I have sent written notice of the public hearing to the above-listed licensees.

The renewal application for license no. 6069 will be considered by the ABC Board at a special meeting on August 25. The renewal application for license no. 5927 will be considered by the ABC Board on September 1. The City's 60-day response deadline to AMCO is September 25, 2026.

There are no department-recommended protests for these alcohol license renewal applications.

Sponsored by: Mayor O'Neall
Date: August 24, 2026

RESOLUTION NO. 5228

A RESOLUTION ADOPTING CITY OF FAIRBANKS RECORDS RETENTION SCHEDULE VERSION 2.0

WHEREAS, on March 21, 2016, the City Council approved Resolution No. 4724, adopting a City of Fairbanks Records Retention Schedule; and

WHEREAS, a records retention schedule enhances the efficiency and accountability of City government by ensuring the orderly management of public records, safeguarding the history of the City of Fairbanks, optimizing storage space within City facilities, and supporting compliance with federal, state, and local records management laws; and

WHEREAS, the Records Manager, with cooperation and input from all City departments, has updated the records retention schedule as outlined in Attachment A; and

WHEREAS, the City Attorney has reviewed and pre-approved the revised records retention schedule attached hereto.

NOW, THEREFORE, BE IT RESOLVED by the Fairbanks City Council that the City of Fairbanks Records Retention Schedule, Version 2.0 is hereby adopted and will be made available to staff on the City's SharePoint site. The schedule may be amended by resolution of the City Council.

BE IT FURTHER RESOLVED that this resolution is effective six days after adoption.

_____
Mindy O'Neall, City Mayor

AYES:
NAYS:
ABSENT:
APPROVED:

ATTEST:

_____
D. Danyielle Snider, MMC, City Clerk

APPROVED AS TO FORM:

_____
Thomas A. Chard II, City Attorney

City of Fairbanks
Records Retention Schedule

Version 2.0

Adopted by Fairbanks City Council
Resolution No. 5228 on August 24, 2026

City of Fairbanks
Office of the City Clerk
800 Cushman Street
Fairbanks, Alaska 99701
(907) 459-6702

D. Danyielle Snider, MMC
City Clerk

Alayna Wesselius
Records Manager

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PREFACE

The purpose of the City of Fairbanks Records Retention Schedule is to increase the efficiency and accountability of city government through the orderly administration of public records, safeguard the City's history, and ensure compliance with federal, state and local laws regarding records retention.

Value of Records that Impact Retention

Administrative/Operational: These records are needed for current operations of the City.

Financial: These records document fiscal transactions needed for tax and audit purposes.

Legal: These records document the rights of citizens or employees or pertain to contractual obligations.

Historical: These records have historical value if they document historical activities, policies, or procedures.

MANAGEMENT AND PRESERVATION OF PUBLIC RECORDS

AS 40.21.070 requires local governments to "promote the principles of efficient records management for local public records kept in accordance with state law" and that governing bodies will "...as far as practical, follow the program established for the management of state records."

AS 29.20.380(4) states that the municipal clerk will "manage municipal records and develop retention schedules and procedures for inventory, storage, and destruction of records as necessary."

DEFINITIONS

Record

AS 40.21.150(6) defines a record as any media, regardless of physical form or characteristic, that is "developed or received under law or in connection with the transaction of official business and preserved or appropriate for preservation by an agency or a political subdivision, as evidence of the organization, function, policies, decisions, procedures, operations, or other activities of the state or political subdivision or because of the informational value in them."

Electronic Record
AS 40.21.150(4) defines electronic record to mean "any information that is recorded in machine readable form" such as emails and attachments, electronic documents, spreadsheets, databases, etc. Email (electronic mail) is essentially a mode of transmission for messages or information and effectively is the same as a memo or a letter in hard copy form. [See also 4 AAC 59.005]

Public Record
AS 40.25.220(3) defines public record as "books, papers, files, accounts, writings, including drafts and memorialization of conversations, and other items, regardless of format or physical characteristics, that are developed or received by a public agency, or by a private contractor for a public agency, and that are preserved for their information value or as evidence of the organization or operation of the public agency; 'public records' does not include proprietary software programs."

RETENTION SCHEDULE FORMAT

Record Series Title	Records Description	Retention/Notes
Records series title A group of similar records filed together by content.	Business Essential Records contain information that is essential to the continuing operation or survival of the organization. These records should be managed in a way to ensure their survival in the event of a manmade or natural disaster. Official Copy A copy of a record that must be retained to fulfill all its legal responsibilities and must be retained for the total retention period cited in the organization's adopted records retention schedule. An electronic copy may constitute the official copy of non-historical records. AS 09.80.010(c) Duplicates All copies of a record not considered to be the Official Record Copy.	Retention The length of time that a record needs to be kept. Disposition The process by which a record is either destroyed or transferred to an offsite location as prescribed by a records retention schedule.

FILE NAMING GUIDE

The name of any record is its principal identifier. Files, folders, subject lines, etc. (paper or digital) should correspond to and/or incorporate the records series title or records description used in the City of Fairbanks Records Retention Schedule with enough information to be understood in any situation.

Consistent naming aids users in locating and accessing information in a timely manner and improves storage costs by eliminating multiple copies, files, or file paths. It also helps meet any legal requirements.

Legally, records must be created, maintained, preserved, stored, transferred, destroyed or disposed of and otherwise managed according to this schedule (AS 40.21.110). This means records must be trustworthy, complete, legally admissible in court, easily accessible, and durable for as long as is required.

DEVELOPING FILE NAMES

The information contained in a record or file name needs to contain a clear understanding of its contents and be organized in the most logical order based on retrieval methods. For example, if the records are retrieved according to their date, the date should appear first.

The following should be considered when developing a consistent naming convention:

- Use only alpha-numeric characters. Avoid using special characters.
    - Special characters are often reserved for use by the operating system.
- Use capital letters to separate words, when possible.
- Do not use spaces. If spacing is necessary or preferred, use underscores (_) or dashes (-) to represent spaces.
    - Spaces are often reserved for operating system functions and might be misread.
- Do not use "stop words", such as if, but, so, for, etc.
- Use leading zeros with the numbers 0-9 to facilitate proper sorting and numeric order, i.e. ProceduresV01, ProceduresV11.
- Dates should follow the ISO (International Organization for Standardization) 8601 standard of YYYY_MM_DD or YYYYMMDD. Variations include YYYY, YYYY-MM, YYYY-YYYY. This maintains chronological order.
    - If dates of creation, closure, or termination are used as cut off dates in your retention schedule, then disposing of the records will be easier.
- Keep file names as short as possible and always include the file extension preceded with a period (Ex: .jpg or .doc).

File names should be simple and easy to understand, and may include some of the following conventions:

Version number (e.g., version 1 [V1, Vers1, V01])

Date of creation (e.g., April 14, 2010 [20100414, 2010_04_14])

Name of creator (e.g., Edward N. Johnson [JohnsonEN, ENJ, ejohnson])

Description of content (e.g., media kit [medkit, mk])

Name of intended audience (e.g., general public [pub])

Name of group associated with the record (e.g., Committee ABC [CommABC])

Release date (e.g., released on March 24, 2008 at 10:30 a.m. eastern time [20080324_1030ET])

Publication date (e.g., published on December 31, 2009 [pub20091231])

Project number (e.g., project number 625 [PN625])

Department number (e.g., Department 126 [Dept126])

Records Retention Schedule Item No. (e.g., ADM-1)

Official Record Copy (e.g., ORC)

Official Record Copy – Permanent Record (e.g., ORCPerm

REVISION HISTORY

Version	Date of Approval	Resolution Number	Scope of Revision
0	April 22, 2002	3999	State of Alaska Local Government General Records Retention Schedule.
1.0	March 21, 2016	4724	First iteration specific to the City.
2.0			Major revision of entire schedule.

GENERAL ADMINISTRATIVE			
Item No.	Record Series Title	Records Description	Retention/Notes
ADM-1	General Correspondence	Consists of original incoming and copies of outgoing letters and memoranda related to the general administration and operation of the City, often arranged topically according to a file classification system. Includes the following types of correspondence: • Intra/inter- departmental • Inter-agency • Legislative • Professional association • Public • Steering committee May consist of but not limited to: • Conference/training notes • Delegations of authority • Emails • Inventories • Logs • Service pin award data • Studies Copies of outgoing letters, memoranda, and messages.	3 years General Correspondence of Mayor, Chief of Staff, Clerk, Department Heads, and Boards and Commissions may have archival value and may need to be retained permanently. *Record maintained by originating department*
ADM-2	Technical Reference Files	Technical studies, newsletters, and publications used in the administration of agency business.	Until superseded/obsolete or administrative need is met *Record maintained by originating department*

GENERAL ADMINISTRATIVE			
Item No.	Record Series Title	Records Description	Retention/Notes
ADM-3.1	Policies and Procedures - Major	These records document City functions and have archival research value that addresses mission-essential functions for which the city is statutorily responsible. • Agreements • Decisions • Directives • Guidance • Manuals • Orders • Procedures • Rules • Substantive and binding agency issued policies • Understandings	Retain permanently *Record maintained by Clerk*
ADM-3.2	Policies and Procedures - Routine	Addresses internal functions and operating procedures.	Until superseded/obsolete + 3 years *Record maintained by Clerk*
ADM-4	Administrative Studies and Special Projects	Final reports and backup data regarding major administrative studies and special management projects.	Retain permanently Review backup data for archival value *Record maintained by originating department*
ADM-5	Reports	Monthly, Statistical, Performance (non-personnel), Damage and Vandalism, Safety, Monitoring, etc.	3 years

GENERAL ADMINISTRATIVE			
Item No.	Record Series Title	Records Description	Retention/Notes
ADM-6	Department History Files	This series documents the Department's key functions, organizational structure, major activities, and significant accomplishments that hold long-term historical value. Promotional media: • Audios/videos • CDs/DVDs • News clippings • Photographs • Press releases • Other electronic media May also include: • Brochures • Department Head speeches • Information officer project materials • Monographs • Pamphlets • Written histories	Retain permanently These records may possess long-term research value. *Record maintained by originating department*
ADM-7	Drafts and Working Papers	Drafts may include copies of materials circulated for review for grammar, spelling, and content. Working papers may include notes and miscellaneous documents used in compiling and assembling the final product. Correspondence, reports, memoranda, and other materials in preliminary or developmental before final product.	Until superseded/obsolete or administrative need is met *Record maintained by originating department*

GENERAL ADMINISTRATIVE			
Item No.	Record Series Title	Records Description	Retention/Notes
ADM-8	Transitory and Miscellaneous	• Appointment books/calendars • Assignments • Bulletins • Correspondence tracking logs • Day sheets • File plans • Forms • Fuel inventory sheets • Mailroom logs/registers • Message books • Printing/stock requests • Property inventories • Purchasing logs • Suspense files • Telephone logs • Other indices	Until superseded/obsolete or administrative need is met *Record maintained by originating department*
ADM-9	Equipment Records	• Delivery orders • Destruction or sale • Documentation of equipment disposal • General maintenance • Instructions/operating manuals • Inventories • Repair/maintenance history • Usage reports • Warranty information • Correspondence	Life of equipment + 2 years *Record maintained by originating department*

GENERAL ADMINISTRATIVE			
Item No.	Record Series Title	Records Description	Retention/Notes
ADM-10	Automotive Management	Vehicles owned and serviced by the City. • Title • Registration • Certificate of insurance • Maintenance records (parts, service, repair estimates, work orders) • Damage/accident reports • Liability accident notices • Inspection reports • Lost/stolen/damaged property reviews • Correspondence	Life of vehicle + 3 years If vehicle is involved in fatal accident or litigation, keep file 25 years or until legal counsel recommends disposition. *Record maintained by originating department*
ADM-11	Official Bonds	Surety bonds to ensure faithful performance, fidelity, and integrity of public officials.	Expiration of bond + 6 years Provided an audit has been conducted.

BUILDING			
Item No.	Record Series Title	Records Description	Retention/Notes
BLD-1	Permit Application Files	• Building • Demolition • Electrical • Mechanical • Plumbing	Retain permanently For non-construction permits, Item No. ENG-6 or LIC-3
BLD-2	Inspection Reports and Files	Documents inspections performed, including any deficiencies noted by the inspector.	Retain permanently
BLD-3	Permits Register	Log of all permits issued by the Building Department.	Retain permanently For non-construction permits, Item No. ENG-6 or LIC-3
BLD-4.1	Master Plumber License -Pass	Includes: • Application • Test • License	Until license expires + 1 year
BLD-4.2	Mater Plumber License -Fail		6 months

BUILDING			
Item No.	Record Series Title	Records Description	Retention/Notes
BLD-5	Abatements	These records document the abatement process and may include: • Blight property file. Reports from: ▪ Fire Department (damage to structure, hazard) ▪ Public Works Department (litter and waste) ▪ Engineering Department (protrusion/blocking right of way) ▪ Police Department (information regarding chronic nuisance property) • Correspondence from community members • Photographs • Records of property ownership • Inspection records • Correspondence between City staff and property owner (notices and proof of service) • Public/Legal notices • Invoices or statements of cost for clean-up and demolition • Appeal hearing files • Copies of actions taken by City Council • Property lien documentation	Completion of abatement + 10 years *For letters of entry, refer to POL-5*

CLERK AND GOVERNING BODY			
Item No.	Record Series Title	Records Description	Retention/Notes
CLK-1	Meeting Minutes	Approved minutes from regular and special meetings of the City Council and any official board/commission of the City Council.	Retain Permanently
CLK-2	Agendas and Meeting Files	Agendas and other backup materials from regular and special meetings of the City Council, any City Council work session and any board/commission of the City Council. May include: • Audio/visual materials • Actions notices • Background research papers • Correspondence • Financial studies • Handouts • Recommendations • Roll call sheets • Staff Reports	1 year
CLK-3	Audio Recordings	Audio recordings of City Council meetings, work sessions, archived executive sessions, and any board/commission meeting.	10 years
CLK-4	Working Agenda Packets (City Council)	Clerk's working agenda folder. Complete agenda packets of any regular or special City Council meeting or any City Council work session.	10 years
CLK-5	Board/Commission Appointments	Includes board/commission rosters and term(s) served by members.	Retain Permanently

CLERK AND GOVERNING BODY			
Item No.	Record Series Title	Records Description	Retention/Notes
CLK-6	Board/Commission Agenda Packets	Complete agenda packet of any official board/commission of the City Council.	Until minutes have been approved
CLK-7	Affidavits of Publication	Includes notices of: • Appeal hearings • Elections • Offices to be filled • Public hearings • Public meetings	Retain Permanently
CLK-8	Appeal Hearings	Records of City Council or board/commission appeal hearings, including: • Appeal packet • Certification memos • Findings of fact • Conclusions of law	Retain Permanently
CLK-9	Proclamations	Issued/prepared by City Mayor or City Council.	Retain Permanently
CLK-10.1	Annexation Files – Passed	• Petitions • Affidavits of publication • Copies of ordinances • Related public hearing backup records • Correspondence	Retain Permanently
CLK-10.2	Annexation Files – Failed		5 years
CLK-11	Cemetery Master Files	• Diagrams • Maps and indices of burial plots	Retain Permanently

CLERK AND GOVERNING BODY			
Item No.	Record Series Title	Records Description	Retention/Notes
CLK-12.1	Petition Records	Initiatives, referenda, and recall documentation filed by private citizens or groups which includes: • Application • Certification • Correspondence between Clerk and petitioners, Attorney, City Council, administration • Sponsor list • Original and supplemental petition packets (blank) • Canvass Board review materials • Insufficiencies report	Retain Permanently Per AS 29.26
CLK-12.2	Petition Packets	Petition packets circulated by sponsors with voter/sponsor signatures.	Certification of election + 30 days
CLK-13	Codes, Ordinances, and Resolutions	Charter amendments, code supplements, and all ordinances/resolutions with numbers and final disposition.	Retain Permanently
CLK-14.1	Oaths of Office	Oaths of Office for all elected and appointed members of the City Council, including the Mayor and certain appointed staff.	Retain Permanently Per AS 29.20.600
CLK-14.2	Council Member Photographs	May include printed and/or digital copies	10 years
CLK-15	Incorporation Files	Files documenting incorporation.	Retain Permanently Per AS 29.05

CLERK AND GOVERNING BODY			
Item No.	Record Series Title	Records Description	Retention/Notes
CLK-16.1	Public Records Request Log	Includes: • Date of request • Name of requestor • Summary of information requested • Department(s) assigned • Date of request disposition	Disposition of request + 3 years
CLK-16.2	Public Feedback and Complaints	Includes: • Written public feedback, suggestions, or complaints • "Tell It to City Hall" forms	Resolution of issue + 3 years
CLK-17	Records Management Files	Includes: • File Plans • Records Disposition Certificates • Records Retention Schedules • Records Transfer Lists	Retain Permanently

DISPATCH			
Item No.	Record Series Title	Records Description	Retention/Notes
DISP-1	Computer Aided Dispatch (CAD) Data	These records document the dispatch of responders for incidents and events. May include but may not be limited to: • Responding agency • Date and time of event • Dispatcher name • Field contacts • Incident notes, number generated, and type • Responding units	Until superseded/obsolete or administrative need is met
DISP-2	Dispatch Telephone and Radio Recordings	Public, other agencies, or departments.	3 years
DISP-3	Policies and Procedures	These records document internal policies, general orders, and department procedures issued by the Dispatch Manager. May include but may not be limited to: Official bulletins that are used to convey information to the administrative staff and dispatch employees.	Until superseded/obsolete or administrative need is met
DISP-4	Stolen Property Lists	Received and internally created lists of lost, stolen, and found property.	Until superseded/obsolete or administrative need is met
DISP-5	Logs and Incident Reports	• NCIC- National Crime Information Center inquiry • APSIN- Alaska Public Safety Information Network • NLETS- National Law Enforcement Telecommunications System	3 years

DISPATCH			
Item No.	Record Series Title	Records Description	Retention/Notes
DISP-6	Outstanding Warrants	Lists of outstanding arrest warrants may include: • Name • Date of birth • Driver's license number • Address • Case number • Charging section • Offense code • Warrant date • Warrant description • Status	Until superseded/obsolete or administrative need is met *May be housed at the State of Alaska Courthouse.*
DISP-7	Training Files	These records document dispatcher training. May include but may not be limited to: • Certificates • Course descriptions • Field Training Officer (FTO) observation reports • Training schedules	Training complete then *Human Resources* *Individual Personnel Files*
DISP-8	Accreditation Files	Documentation relating to compliance assessment and maintenance. Such as: • Goals and objectives • Standards • Status and progress reports	Until superseded/obsolete or administrative need is met then *Human Resources* *Individual Personnel Files*

ELECTIONS			
Item No.	Record Series Title	Records Description	Retention/Notes
EL-1	Election Materials	Consists of: • Precinct election certificates • Tallies • Voter registers • Ballots (voted, unused, spoiled, etc.) • Package receipts • Requests for recount	Until election is certified + 30 days If election is contested, retain longer per AS 15.15.470
EL-2	Polling Place Agreements	Agreements between local government and outside agencies for use of facilities as polling places.	1 year
EL-3	Declarations of Candidacy and Other Candidate Information	Consists of: • Declarations of candidacy • Financial disclosure statements • Individual certificates of election • Pamphlet submittals • Withdrawals of candidacy	Term end + 6 years If not elected, retain 6 years
EL-4	Campaign Disclosure Information	Information reported to APOC by the City when money is spent on informational campaigns.	6 years
EL-5	Election Administrative Files	Internal administrative election files by election year.	Until election is certified + 10 years
EL-6	Election Records (Regular, Runoff and Special Elections)	Consists of: • Notice of election • Sample ballot • Certificate of election with signatures of canvass board members, City Clerk, Mayor and City Councilmembers	Retain Permanently *Keep current year and pervious 15 years in office for administrative use then archive.*

ELECTIONS			
Item No.	Record Series Title	Records Description	Retention/Notes
EL-7	Election Officials' Records	Includes absentee voting officials and may consist of: • Correspondence • Interest letters • List of approved election workers • Mileage reimbursement requests • Oaths • Payroll / paystubs • Recruitment materials • Training notes	1 year

ENGINEERING			
Item No.	Record Series Title	Records Description	Retention/Notes
ENG-1	Plans, Maps, and Drawings	Plans, drawings, maps and as-builts including City buildings, streets, utilities, survey/plat, lot plans, and easements. Includes engineering field measurements and notes, sketches, and diagrams including elevations, distance, benchmarks, easements, drainage, and test data.	Retain Permanently Reference copies may be disposed of after administrative need is met.
ENG-2	Construction Project Files	Specifications, contracts, bids, evaluations, performance bonds and correspondence documenting solicitation, selection, award/ administration of contracts and professional service agreements. May consist of: • Contract modifications • Field reports • Job accounting information • Project close-out information	Until project is completed + 20 years
ENG-3	Street/Traffic Light Records	Maintenance and service documents. May include but not limited to intersection/signal diagrams, specifications, schematics, work and repair orders, and reference materials.	Retain Permanently
ENG-4	Commercial Underground Storage Tank Records	• Registration • State certification • Maintenance • Repair history	Life of the tank + 6 years Per AS 46.03.360-450; 18 AAC 75. 18 AAC 78 and 40 CFR 280

ENGINEERING			
Item No.	Record Series Title	Records Description	Retention/Notes
ENG-5	Right of Way and Easement Files	Grant of right of way permits and easement records for legal permission to conduct work on private property. Records may include but may not be limited to laying, constructing, maintaining, operating, repairing, and servicing water and sewerage pipes, mains, drains, signs and utilities. May include repairing roadways, sidewalks, lighting, traffic signals, signs, and utilities. May also include vacations, descriptions of easement areas, diagrams, plans, agreements, memoranda, correspondence and property disposition.	Retain Permanently
ENG-6.1	Engineering Service Requests - Utility Permit	New installation or repair on main line. • Water including fire hydrants • Sewer	Retain Permanently For non-construction permits, Item No. BLD-1, 3 or LIC-3
ENG-6.2	Engineering Service Requests - Other Permit	• Closures • Driveway • Excavation	Until project is completed + 10 years For non-construction permits, Item No. BLD-1, 3 or LIC-3

ENGINEERING			
Item No.	Record Series Title	Records Description	Retention/Notes
ENG-7	Regulatory Compliance Files	Records documenting compliance with state/federal requirements. May include: • Complaints • Copies of authorization applications to perform work • Correspondence • Memoranda • Notices of public hearings • Notices of violations • Plans/maps • Requests for preliminary determinations	Until project is completed + 6 years
ENG-8.1	Subdivisions and Land Development Project Files - Approved	Agreements with developer. May include: • Applications • Boundary surveys • Checklists • Covenants • Diagrams / Drawings • Inspections • Memoranda • Other analyses • Plans • Plats • Signed agreements • Site plan review • Specifications • Subsurface soils investigations	Retain Permanently
ENG-8.2	Subdivisions and Land Development Project Files - Denied		Until administrative need is met

FINANCE, PAYROLL, AUDIT, & GRANTS			
Item No.	Record Series Title	Records Description	Retention/Notes
FPG-1	General Accounting Records	Work papers, spreadsheets, summaries, receipts, and other data documenting department accounting practices. Includes financial data regarding accounts payable/receivable, grant/contract administration, assessment of fines, payment of license fees, etc.	3 years Provided an audit or other annual financial statement has been certified. Grant/contract records must be retained as specified by the grantor.
FPG-2.1	Department Budget Files - Work Papers	Documents the development of department operating and capital budgets prior to presentation to City Council. Includes annual budget with organizational charts and annual estimates of revenue and expenditures.	3 years
FPG-2.2	Department Budget Files - Final Approved Budget		Retain Permanently
FPG-3.1	Asset Inventories - Fixed	Inventories of owned assets indicating value, location, purchasing information, etc. The Government Accounting Standards Board (GASB) requires municipalities to record infrastructure as part of their fixed assets.	Life of asset or until grantor authorizes disposal of grant funded assets
FPG-3.2	Asset Inventories - Non-Fixed		3 years

FINANCE, PAYROLL, AUDIT, & GRANTS			
Item No.	Record Series Title	Records Description	Retention/Notes
FPG-4.1	Annual Comprehensive Financial Audit Report	Includes annual audited financial statements.	Retain Permanently
FPG-4.2	Financial and Accounting Reports	Includes reports prepared by the Chief Financial Officer summarizing financial condition, activities, and balances.	Current fiscal year + 3 years Provided an audit or other annual financial statement has been certified.
FPG-5	Sales Tax Registrations and Reports	Includes registration and monthly sales tax filing from businesses.	3 years
FPG-6.1	Ledgers - General, Revenue, and Expenditure	Includes general ledger records for transactions recorded in the financial accounting system for all funds.	Retain Permanently
FPG-6.2	Ledgers - Subsidiary	Includes subsidiary ledger records for transactions recorded in the financial accounting system for all funds.	Current fiscal year + 3 years Provided an audit or other annual financial statement has been certified.
FPG-7	Purchasing and Vendor Files Non-Grant	Documentation relating to the procurement and payment of City purchases (commodities, services, travel, fees, permits, etc.).	Current fiscal year + 3 years

FINANCE, PAYROLL, AUDIT, & GRANTS			
Item No.	Record Series Title	Records Description	Retention/Notes
FPG-8	Banking Records	Bank reconciliation and records of bank transactions for revenue and expenditures: • ACH- Automated Clearing House transactions • Bank fees • Check registers • Deposits • Outstanding checks • Outstanding deposits • Voided transactions (e.g., stopped payments) • Wire transfers	Current fiscal year + 7 years Provided an audit or other annual financial statement has been certified.
FPG-9	Government Revenue Sharing	Municipalities may be allocated money on a formula basis for public roads, public safety departments, equipment, etc. May consist of applications, correspondence and year-end audits/budgets.	3 years Provided an audit or other annual financial statement has been certified.
FPG-10	Bond Records and Registers	Cancelled/redeemed bonds/coupons documenting proof of issuance and payments to individual bondholders. Includes numeric listing of bond/coupon register.	Until issue called + 20 years Provided an audit or other annual financial statement has been certified.
FPG-11	Bills of Sale	Official documentation of sales transactions between the City and a buyer.	7 years

FINANCE, PAYROLL, AUDIT, & GRANTS			
Item No.	Record Series Title	Records Description	Retention/Notes
FPG-12	Foreclosure Files	Documents foreclosures and includes: • Delinquency reports • Billings • Petitions of judgment • Certified mailings • Final judgments • Certificates of redemption	Until case is closed + 10 years Certain files may have historical value. Per AS 09.10.030 there is a 10-year statute of limitations on action to recover real property.
FPG-13	Assessment Files	Real and business property annual assessment files. Includes property description, assessed value of property, and names/addresses of owners.	Retain Permanently Per AS 29.45.160
FPG-14	Payroll Warrant Register	Lists check number, employee name, net amount, and financial coding.	Termination of employee + 10 years
FPG-15	Payroll Journal Entry	Record of employee and vendors payroll transactions.	3 years Provided an audit or other annual financial statement has been certified.

FINANCE, PAYROLL, AUDIT, & GRANTS			
Item No.	Record Series Title	Records Description	Retention/Notes
FPG-16	Payroll Case Files	These case files document employee salary and may include payroll action forms, Public Employees' Retirement System (PERS) enrollment/change forms and Internal Revenue Service data. May include the following reports: • 457(b) Plan Accounting Records • Federal Insurance Contribution Act • Overtime • Retirement • Savings Bond • Stopped/reissued warrants • Summary/special detailed queries • Unemployment insurance	Termination of employee + 50 years
FPG-17	Payroll Deduction Authorizations	Includes reports and lists.	Termination of employee + 4 years
FPG-18	Leave Accounting	Timesheets (daily, weekly, or monthly records of hours worked) and documentation for accrued/used leave. *For questions or clarification, contact the State Division of Retirement and Benefits.*	3 or 50 years Only destroy after 3 years if the associated data or leave accounting is recorded elsewhere.
FPG-19	Employer W-2 Copy	Federal withholding tax statement.	Retain Permanently

FINANCE, PAYROLL, AUDIT, & GRANTS			
Item No.	Record Series Title	Records Description	Retention/Notes
FPG-20	Electronic Federal Tax Payment System (EFTPS) Documentation	Documents tax deposits transmitted to the federal government (includes spreadsheets and other backup).	4 years
FPG-21	Internal Revenue Service Reports and Reconciliations	May consist of the following Internal Revenue Service reports 1099-R and related reports and 945 and reconciliations (work papers) regarding tax liability for retirees and their beneficiaries.	Until due date of appropriate tax return period or date tax is paid, whichever is later + 4 years
FPG-22	Grant Administration Files - State or Federal	Documents receipt of State or Federal monies. Consists of: • Applications • Agreements • Special conditions • Copies of grant awards notifications • Fiscal reports • Reports (audit, status, progress and compliance) • Closeout documents • Correspondence	6 years after grant closeout Grant/contract records must be retained as specified by the grantor.
FPG-23	Grant Applications (Not Awarded)	Applications that were not approved or funded.	1 year

FIRE AND RESCUE			
Item No.	Record Series Title	Records Description	Retention/Notes
FIR-1	Fire Investigation Files	Record of fire department investigations of suspicious or incendiary fires. • Reports (fire, rescue, investigators, State Fire Marshal, police, casualty, insurance) • Memoranda • Diagrams • Audio/video evidence • Other documentation	Until investigation is closed + 30 years
FIR-2	Incident Reports Fire and Emergency Medical Services (EMS)	Reports of any incident that involved fire services but did not involve a patient. Reports of any incident that involved emergency medical services (EMS) that involved a patient and an ambulance.	7 years
FIR-3.1	Permits and Licenses Issued	Applications and permits issued by local fire authority. May include: • Model rocket engines • Burn permits • Permits relating to fireworks • Sale of fire detection equipment • Storage/handling of flammable liquids or hazardous substances	Until permit expires + 3 years

FIRE AND RESCUE			
Item No.	Record Series Title	Records Description	Retention/Notes
FIR-3.2	Permits and Licenses EMS -Approved	Applications and licenses issued by local fire authority. Includes but not limited to: • Business plan • Vehicles • Equipment • Training & Certification • Insurance	Until license expires + 7 years
FIR-3.3	Permits and Licenses EMS -Denied, rejected, incomplete, or withdrawn		1 year
FIR-4	Fire Inspection and Compliance Files	This series documents fire safety inspection before and after building construction is completed. May include: • Building plans used in inspection/approval process detailing fire detection specifications or other Fire Safety Code compliance requirements • Certificates of inspection • Violation appeals • Department responses • Surveys • Applications for variances • Building variances issued by City Council.	Until building is no longer in use Retain building plans until Certificate of Occupancy is issued and plans have no administrative value.
FIR-5	Contingency and Emergency Service Plans	Emergency operation plans, Federal Emergency Management Agency (FEMA)	Retain Permanently

FIRE AND RESCUE			
Item No.	Record Series Title	Records Description	Retention/Notes
FIR-6	Violation and Complaint Files	Record of violations and complaints relating to the Fire Safety Code. May consist of but not limited to: • Name and address of complainant • Date and time of complaint • Location of violation/complaint • Complaint summaries • Investigation reports • Disposition • Department follow-ups	Until resolution of complaint + 3 years
FIR-7	Fire and EMS Training Files	Consists of • Course descriptions • Exam results • Training dates • Correspondence	Until termination of employee or inactive volunteer + 6 years then *Human Resources* *Individual Personnel Files*
FIR-8	Fire Prevention Education Programs	Multimedia materials used in Fire Prevention Education • Audio/visual recordings • Brochures • CDs • Pamphlets • Posters • Other program resources	Until superseded/obsolete or administrative need is met
FIR-9	Oil Spill Preparedness Files	Includes information related to oil spill drills, incidents, and inspections.	6 years

FIRE AND RESCUE			
Item No.	Record Series Title	Records Description	Retention/Notes
FIR-10	Hazardous Materials Right to Know Files	This series may include USDOL* forms or material safety data sheets, emergency and hazardous chemical inventory forms, company emergency plans, inspection reports, or other mandated documentation relating to hazardous substances. Consists of detailed product/chemical identification listings supplied annually by individual employers that hold, use, or sell products considered hazardous by the USDOL, DOSH**.	If the employer does business in the city + 7 years *USDOL = United Stated Department of Labor **DOSH = Department of Occupational Safety and Health
FIR-11	Hazardous Materials Incident Files	Records of hazardous material incidents. May include hazardous incident reports, copies of fire/rescue reports, narratives, and memoranda.	Retain Permanently
FIR-12	Equipment Inspection Records	Records of inspections: • Cubic feet of tanks • Hoses • Ladders (ground and aerial) • Mask service information (model, serial number, purchase date, type) • Service records	3 years Retain mask and ladder service information until replaced or no longer in service.

HUMAN RESOURCES MANAGEMENT			
Item No.	Record Series Title	Records Description	Retention/Notes
HR-1	Individual Personnel Files	General Summary of City Personnel Employment History	Termination of employment + 50 years Certain information is confidential, and personnel records may differ depending on Collective Bargaining Agreement at the time.
HR-2	Recruitment, Selection, and Appointment Records		Date of hire + 2 years Certain information is confidential, and personnel records may differ depending on Collective Bargaining Agreement at the time.
HR-3	Job Applications (Unsolicited)		1 year Certain information is confidential.
HR-4	Salary Schedules		Until superseded/obsolete or administrative need is met
HR-5	Job Descriptions and Class Specifications	Description of specific duties for each position. May contain: • Necessary education/certifications • Examples of duties • Salary • Classification of position • Distinguishing characteristics	Until superseded/obsolete or administrative need is met

HUMAN RESOURCES MANAGEMENT			
Item No.	Record Series Title	Records Description	Retention/Notes
HR-6	Employee Medical Records	Routine health related records *Excludes records covered by Worker's Compensation Claims, refer to RM-4*	Termination of employment + 30 years Per 29-CFR 1910.1001 Certain information is confidential per AAS 40.25.120. Personnel records may differ depending on Collective Bargaining Agreement at the time.
HR-7	Grievance Case Files	Documents grievances filed by employees against the City. Consists of: • Grievance forms • Investigative notes • Reports • Correspondence and related backup	Resolution and execution of any stipulations + 5 years Certain information is confidential.
HR-8.1	Collective Bargaining Negotiation Files	Records relating to negotiations with labor unions. Includes but not limited to: • Requests to bargain • Bargaining session records and notes • Proposals/counter proposals • Letters of agreement, correspondence, memoranda, forms, reports • Tentatively agreed articles • Negotiation agreements	Until collective bargaining agreement is approved + 5 years
HR-8.2	Collective Bargaining Agreements		Retain Permanently

HUMAN RESOURCES MANAGEMENT			
Item No.	Record Series Title	Records Description	Retention/Notes
HR-9	Contract Interpretation and Arbitration Decisions	Includes exhibits, briefs, and arbitrations relating to contract interpretation.	Retain Permanently
HR-10	Equal Employment Opportunity Files	Consists of records regarding discrimination charges, including documentation of the party making the charge and other employees/applicants in the same or similar positions, and departmental actions.	10 years Certain information is confidential per AS 18.80.115
HR-11	Employment Eligibility - U.S. Citizenship and Immigration Services (USCIS)	Records relating to the verification of employment eligibility within the United States. May include but not limited to: • Federal I-9 form • Copies of driver's license, passports, or other photo identification • Copies of certificate of naturalization and supporting documents • H-1B labor condition applications and approvals	Date of hire + 3 years Or Termination of employment + 1 Year *Per USCIS handbook for Employers M-274 10.0*
HR-12	Unfair Labor Practices Case Files	Consists of: • Complaints • Notices of hearing • Witness lists • Audio/video recordings • Hearing transcripts and exhibits • Copies of final decisions and orders • Correspondence Also includes cases dismissed, withdrawn, or settled.	For the life of the Collective Bargaining Agreement. Review prior to destruction for cases that may have historical significance.

INFORMATION TECHNOLOGY			
Item No.	Record Series Title	Records Description	Retention/Notes
IT-1	Website Content, Management and Operations Records	Website-related records including web content records which represent information presented on a website and website administrative records which provide evidence of the management and operations of the website. Records may include: • Content pages inclusive of the HTML markup • Lists of URL's referenced in the site's hyperlinks • Maintenance of department sites • Notes • Other development materials used in the creation of the website • Procedures • Records addressing usage of copyrighted material • Records generated when a user interacts with a site • Server environment configuration specifications • Site maps depicting directory structure/hierarchy • Software applications used to operate the site • Web snapshots • Webmaster policies • Webpage metrics/statistics • Website design records	3 years Review for permanent retention. Media is rotated according to departmental backup procedures. Backup recordings may be stored offsite for security.

LAND MANAGEMENT			
Item No.	Record Series Title	Records Description	Retention/Notes
LM-1	Land Management Case Files	Documents management of lands including: • Purchases • Leases • Transfers • Uses	Date of transfer or end of contract + 10 years Files subject to potential litigation must be retained until there is no legal value. Some files may have permanent historic value. *Record maintained by Purchasing Agent*
LM-2	Sale of Property	Files pertaining to the sale of City-owned real property	Retain Permanently *Record maintained by City Attorney*
LM-3	Land Township/Range/ Section Files and Entitlement Files	Includes: • Deeds • Easements • Management/maintenance agreements • Register of City-owned property (including excess) • Controlled property management reports • Historic information of land acquired from State and Borough (selection, patent)	Retain Permanently *Record maintained by City Engineer*
LM-4	Property Tax Foreclosure Records	Includes only properties acquired by the City through the tax foreclosure process.	Retain Permanently *Record maintained by City Attorney*

LAND MANAGEMENT			
Item No.	Record Series Title	Records Description	Retention/Notes
LM-5	Site Selection Files	Documents site selection for proposed facilities including: • Administrative facilities • Dispatch • Fire • Police • Public works • Training	Retain Permanently *Record maintained by City Engineer*

LEGAL			
Item No.	Record Series Title	Records Description	Retention/Notes
LGL-1	City Attorney Opinions	Official opinions regarding legal issues affecting the City of Fairbanks. May include information/action memoranda regarding ordinances and resolutions.	Retain Permanently Per Fairbanks General Code Section 2-542(10). These Records are typically not disclosable under Attorney-Client and Attorney Work privileges.
LGL-2	Regulation Files	Includes matters relating to local legislation in which the city has an interest or has been involved.	10 years Review for historical value.
LGL-3	Notice to Comply and/or Violation Reports	Includes notices drafted and issued by the City Attorney's Office for failure to comply with City Code.	3 years
LGL-4	Vehicle Impound and Forfeiture Files	Records documenting vehicle impounds including but not limited to: • Impound and forfeiture documentation • Impound payments • Release authorization	Until vehicle is released, sold at auction, or otherwise disposed + 6 years *Official Record Copies of certain documents may be administered by Impound Lot Manager.*

LEGAL			
Item No.	Record Series Title	Records Description	Retention/Notes
LGL-5	Litigation Case Files	This series documents city civil and criminal cases. Includes: • Analyses • Briefs • Correspondence • Court proceedings • Evidence • Exhibits • Final reports • Investigative materials • Other media • Photographs • Pleadings • Requests for legal opinions • Research notes • Transcripts • Work papers	Until case is closed + 6 years These records are typically not disclosable under Attorney-Client and Attorney Work privileges.

LICENSING AND PERMITTING			
Item No.	Record Series Title	Records Description	Retention/Notes
LIC-1	Business License Applications	This series documents licensure of businesses operating in the city limits.	Until license expires + 3 years
LIC-2	Alcohol and Marijuana Licensing	Includes: • Alcohol and Marijuana Control Office (AMCO) notices and license applications • City department recommendations and reports • Communications between Clerk and City Council • Council recommendations to AMCO	10 years
LIC-3.1	Licenses and Permits Non-Business -Approved	Includes: • Special/multi-vendor event permits • Occupational licensing • Noise variance permits	Until license or permit expires + 1 year
LIC-3.2	Licenses and Permits Non-Business -Denied, rejected, incomplete, or withdrawn		6 months For non-construction permits, Item No. BLD-1, 3 and ENG-6

POLICE			
Item No.	Record Series Title	Records Description	Retention/Notes
POL-1.1	POLICE REPORTS Major Crime	These records document: • Criminal Negligence Homicide • Manslaughter • Murder 1 & 2 • Sexual Assault 1 & 2	50 years Per AS 12.36.200
POL-1.2	POLICE REPORTS Unsolved/Open Homicide and Missing Persons	These records document: unsolved homicide and Missing Persons cases	Retain until solved, then fall under POL-1.1 and POL-1.3
POL-1.3	POLICE REPORTS Criminal	These records document: • Felonies • Misdemeanors • Criminal matters	20 years
POL-1.4	POLICE REPORTS Non-Criminal	These records document: non-criminal reports taken for documentation purposes May include but not limited to: • Lost Property • Found Property • Administrative Assignments	3 years

POLICE			
Item No.	Record Series Title	Records Description	Retention/Notes
POL-2.1	Body-Worn Cameras & In-Car Digital Recordings - Reportable Matters	These records document recordings captured by body-worn cameras (a device worn by a law enforcement officer), and vehicle mounted cameras (dash cams). Includes Major Crimes, Felonies, Misdemeanors, and Traffic Collisions.	Follow associated schedules of • Major Crimes - POL-1.1 • Homicide/Missing Person - POL-1.2 • Other Felonies - POL-1.3 • Non-Criminal – POL-1.4 • Misdemeanors - 5 years
POL-2.2	Body-Worn Cameras & In-Car Digital Recordings - All Other Matters	These records document recordings captured by body-worn cameras (a device worn by a law enforcement officer), and vehicle mounted cameras (dash cams) of non-reportable interactions and traffic violations.	1 year
POL-3	General Orders and Policies	These records document internal policies, general orders, and department orders issued by the Chief. They may include but may not be limited to official bulletins that are used to convey information to the administrative staff and officers.	Current date rescinded, replaced, or modified. May retain records until administrative need is met.
POL-4	Correspondence	These records document communication between staff members within the department, correspondence with outside groups, general inquiries from the public or other government agencies, etc. This correspondence does not relate to specific incidents or initiatives and is arranged chronologically or by correspondent name (not filed in topical files or case files).	2 years

POLICE			
Item No.	Record Series Title	Records Description	Retention/Notes
POL-5	Letters of Entry	Abatement Entry	Expiration of agreement + 6 years
POL-6	Traffic and Parking Citations	All minor offense citations and parking violations	5 years
POL-7	Citation Data and Reports	These records document the lifecycle of a citation after issuance. May include: • Corrected or dismissed citations • Case updates, reports, and payment summaries to/from Fairbanks District Court • Disposition reports • Affidavit lists • PFD garnishments or assignments • Write-off for deceased defendants	Current year + 1 year* *Electronic case data retained for life of the citation software system. *Records Maintained by City Clerk's Office*
POL-8.1	Computer Aided Dispatch (CAD) Data	These records document the dispatch of officers for incidents and events. May include but not limited to: • Date and time • Field contacts • Incident number • Incident type • Who responded	5 years *Official Record maintained by Dispatch*

<table>
<tr><td colspan="4">POLICE</td></tr>
<tr><td>Item No.</td><td>Record Series Title</td><td>Records Description</td><td>Retention/Notes</td></tr>
<tr><td>POL-8.2</td><td>Logs and Indices
- Dispatch Audio Recordings</td><td rowspan="2">May include the following type of logs/indices:
Accident
Administrative (documenting time in court, educational activities, assisting another officer)
Daily assignment
Evidence
arrest
NCIC- National Crime Information Center inquiry
Overtime
Property recovery
Radar
Radio / Dispatch
Staffing/daily roster
Tape control
Towed / Impounded Vehicles
Unit
Weapon
Weather</td><td>30 days
Official Record Copy may be administered in another records series or department.</td></tr>
<tr><td>POL-8.3</td><td>Logs and Indices
- Miscellaneous</td><td>5 years
Official Record Copy may be administered in another records series or department.</td></tr>
</table>

POLICE	PERSONNEL INFORMATION RECORDS		
Item No.	Record Series Title	Records Description	Retention/Notes
POL-9.1	Personnel Records -Working Documents	These records document summary information that is collected about employees. May include but may not be limited to: • Address • Birthday • Employee badge number • Hire date • PERM ID • Phone number • Seniority • Termination date	Until employment ends* *The copy kept by the department is a duplicate.*
POL-9.2	Personnel Files -Working Documents	These records document the personnel transactions for each employee. Includes: • Outside employment forms • NDA- Non-Disclosure Agreement • Professional development form	Until employment ends* *The copy kept by the department is a duplicate.*
*For all POL-9: Official Record Copy may be administered in another records series or department (ex HR, LGL, Etc.). Per AS 09.10.70 a tort or civil rights claim against a peace officer for doing an act in an official capacity or by omission of an official duty must be filed within two years. **FINAL REPORT IN THE HUMAN RESOURCES FILE**			

POLICE	PERSONNEL INFORMATION RECORDS		
Item No.	Record Series Title	Records Description	Retention/Notes
POL-9.3	Training Files	These records document the training that officers received. May include, but may not be limited to: • Course descriptions • FTEP- Field Training and Evaluation Program observations • Schedules • Certificates	Until employment ends + 5 years*
POL-9.4	Citizen Complaint	These records document the tracking of incidents. They may include, but may not be limited to: • Date and time • Incident numbers • Location • Names • Nature of crime • Record of complaints to police Includes data relating to reporting party, including: • Dispatch information • Disposition • Location • Time and nature of incident	3 years*

*For all POL-9: Official Record Copy may be administered in another records series or department (ex HR, LGL, Etc.).
Per AS 09.10.70 a tort or civil rights claim against a peace officer for doing an act in an official capacity or by omission of an official duty must be filed within two years.

FINAL REPORT IN THE HUMAN RESOURCES FILE

POLICE	PERSONNEL INFORMATION RECORDS		
Item No.	Record Series Title	Records Description	Retention/Notes
POL-9.5	Police Action Reviews	Internal reviews of officer performance during incidents involving the application of physical force for detention or arrest or as required for law enforcement action.	2 years*
POL-9.6	Internal Affairs Investigations	These records document department investigations of alleged employee misconduct and the outcome of such investigations. May include, but may not be limited to: • Citizen and internal complaint forms • Final disciplinary action • Final disposition reports • Investigative narrative reports	3 years*
	General Litigation	Documents civil, administrative, or other criminal justice agency actions, hearings or forfeitures. Retention begins after the case ended or the matter was closed (including any appeals).	

*For all POL-9: Official Record Copy may be administered in another records series or department (ex HR, LGL, Etc.).
Per AS 09.10.70 a tort or civil rights claim against a peace officer for doing an act in an official capacity or by omission of an official duty must be filed within two years.

FINAL REPORT IN THE HUMAN RESOURCES FILE

PROCUREMENT AND CONTRACTS			
Item No.	Record Series Title	Records Description	Retention/Notes
PCG-1	Procurement Records Pre-Awarded Non-Construction Non-Grant	This series includes documents related to purchases of goods and services. Includes: • Bid abstracts • Bid specifications • Contracts/leases • Correspondence • Delivery orders • Price quotations • Purchase orders/requisitions • Requests for proposal • Tracking logs • Vendor solicitations	1 year
PCG-2	Procurement Records Post-Awarded Non-Construction Non-Grant	Consists of: • Notification of award • Original contract • Amendments or renewals • Special conditions • Fiscal reports • Payment logs • Progress reports • Correspondence Includes contracts for leased space, contract insurance, and bonds.	Life of contract + 20 years Per AS 09.10.053, the Statute of Limitations is 3 years for causes of action which accrued after August 7, 1997 (SLA 1997 Chapter 26, Sections 3 and 4. Silvers v Silvers, 999 P.2d 786, 790 n.4 (Alaska 2000).

PUBLIC WORKS			
Item No.	Record Series Title	Records Description	Retention/Notes
PW-1	Snowplow and Snow Removal	Records relating to snowplow routes and activity. May include but may not be limited to: • Crew lists • Logs • Maps • Routes • Correspondence	Until superseded/obsolete or Administrative need is met
PW-2	Sanitation Files	Records relating to sanitation functions, truck routes and activity. May include: • Correspondence • Crew lists • Logs • Manifests • Maps • Public notices • Routes • Vehicle scale/tonnage reports	3 years If records are subject to potential litigation, retain permanently.
PW-3	Facility Maintenance Files	All data relating to operation of facility. • Accounting • Bids • Enabling legislation • Permits • Proposals • Reports • Utility correspondence	Until administrative need is met + 1 year *Official Record Copies of certain documents may be administered by other departments.*

PUBLIC WORKS			
Item No.	Record Series Title	Records Description	Retention/Notes
PW-4	Recycling and Hazardous Waste Records	Record of materials collected and disposed of: • Antifreeze • Asbestos • Brake/power steering fluid • Freon • Household hazardous wastes • Oil • Paint • Sharps • Other waste Data may include: • Name of resident • Address • Date • Materials collected • Disposal method	3 years If records are subject to potential litigation, retain permanently.
PW-5	Work/Repair Requests and Complaints	Requests for work or repairs initiated internally or by a citizen complaint. Data may include: • Name and number of complainant or requestor • Location • Type of work to be performed • Dates and times of receipt/response	3 years

PUBLIC WORKS			
Item No.	Record Series Title	Records Description	Retention/Notes
PW-6	Maintenance Work Orders and Logs	Records of work performed relating to electrical, street maintenance (paving/patching), or stormwater systems. May include but not limited to: • Date/Time • Order number • Location • Description of work • Authorization • Names of staff performing work • Itemized labor • Equipment • Material information	3 years
PW-7	Fuel Summaries and Receipts	Fuel summaries recording daily, weekly, or monthly fuel dispensed. May include: • Gallons delivered • Grade of fuel • Meter/stick readings • Pump locations • Total gallons consumed or oil/antifreeze disbursed Fuel receipts recording individual fuel intake. May include: • Vehicle number/type • Driver • Meter readings • Gallons received	Until audit is completed + 1 year

RISK MANAGEMENT			
Item No.	Record Series Title	Records Description	Retention/Notes
RM-1	Insurance Policies and Endorsements	This series includes: • Billing information • Bonds • Financial coding vouchers • Insurance proposals • Policies and endorsements • Riders • Correspondence	Until policy expires + 50 years The City Attorney will review all expired policies prior to destruction to determine if additional retention is required due to pending claims or litigation.
RM-2	Risk Management Claim Files	May include but may not be limited to: • Accident reports (property damage and personal injury) • Correspondence to/from claims adjusters • Individual claim records • Payment orders/verification • Pleadings/depositions • Private attorneys • Summary reports	Until claim is settled and all legal aspects are resolved + 50 years
RM-3	Injury and Accident Records	May include but may not be limited to: • Incident/accident reports • Medical evaluations • Other data relating to on-the-job injuries and accidents • Public safety officer reports • Time loss documentation	Resolution of accident + 50 years

RISK MANAGEMENT			
Item No.	Record Series Title	Records Description	Retention/Notes
RM-4	Workers' Compensation Claims	Documents include: • Compromise and release agreements • Copies of board decisions/orders • Legal filings. • Medical reports • Reports of injury/illness • Second Injury Fund reimbursements • Vocational rehabilitation reports/decisions • Correspondence May include cases pertaining to: • Death • No time loss • Permanent total disability • Time loss	Until case is inactive + 50 years
RM-5	Apparatus Accident Files	Department record of accidents involving City fire/rescue vehicles. May include but may not be limited to: • Police reports • Witness statements • Memoranda • Diagrams • Photographs • Related documentation	3 years Retain longer if involved in litigation. Consult with legal counsel prior to disposition.

RISK MANAGEMENT			
Item No.	Record Series Title	Records Description	Retention/Notes
RM-6	Hazard Communication and Material Safety Data Sheets	Lists of hazardous chemicals present in the workplace and copies of material safety data sheets received with incoming shipments of chemicals and posted in the workplace.	30 years *Official Record Copy retained by receiving Department.* Per 29 CFR 1910.1200

Sponsored by: Mayor O'Neall
Date: August 24, 2026

RESOLUTION NO. 5229

A RESOLUTION ADOPTING THE MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN AS THE OFFICIAL MITIGATION PLAN OF THE CITY OF FAIRBANKS, PENDING FEMA APPROVAL

WHEREAS, the City of Fairbanks is vulnerable to damages from natural hazard events which pose a threat to public health and safety, and could result in property loss and economic hardship; and

WHEREAS, staff representing the Fairbanks North Star Borough, the City of Fairbanks, the City of North Pole, and the State of Alaska ("Planning Team") have jointly developed a plan to address shared risks and regional mitigation priorities; and

WHEREAS, the Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP) recommends actions to protect people and property from natural hazards, reduce future disaster impacts, and strengthen the City's emergency preparedness; and

WHEREAS, the Disaster Mitigation Act of 2000 (P.L. 106-390) (DMA 2000) and associated Federal regulations published under 44 CFR Part 201 require the City to formally adopt a Hazard Mitigation Plan subject to the approval of FEMA to be eligible for federal hazard mitigation projects and activities funds; and

WHEREAS, the MJ-HMP includes a plan maintenance process requiring regular monitoring, annual review, and formal updates at least every five years to reflect changing conditions and maintain compliance with federal requirements; and

WHEREAS, public meetings and surveys were conducted during the formation of the MJ-HMP to solicit public opinion and disseminate information; and

WHEREAS, the Federal Emergency Management Agency (FEMA) mandates the creation of HMPs to coordinate pre- and post-disaster mitigation planning efforts and funding; and

WHEREAS, the MJ-HMP is intended to be integrated into other City plans, programs, and regulatory mechanisms, including capital improvement planning, land use and development review, and emergency management operations; and

WHEREAS, the MJ-HMP prioritizes the protection of critical infrastructure, essential services, and interconnected lifeline systems to reduce disruption and support continuity of operations during hazard events; and

WHEREAS, the MJ-HMP is a technical, non-binding, non-regulatory document.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF FAIRBANKS, ALASKA, as follows:

Section 1. The Multi-Jurisdictional Hazard Mitigation Plan is hereby adopted as an official plan of the City, pending approval by FEMA.

Section 2. The Planning Team, or their designee, is hereby directed to implement the recommended actions assigned to them in the Mitigation Action Plan (Chapter 11).

Section 3. City staff will work with the multi-departmental Hazard Mitigation Planning Team to lead annual efforts to make administrative and statistical updates to the Multi-jurisdictional Hazard Mitigation Plan as indicated in the Plan Maintenance Section (Section 11.9).

Section 4. The Planning Team will provide an annual progress report on the progress toward implementing mitigation actions; identification of mitigation actions that may require revision, deferral, or removal; changes in risk, hazard conditions, or vulnerability; and changes in regulatory, fiscal, or administrative capability, to the Borough Mayor and Assembly following the annual review meeting.

Section 5. The Planning Team has the authority to make administrative text changes, update statistics, and add new projects during the review cycles between adoption periods in accordance with the Plan Maintenance and Update Process Section of the plan (Section 11.9.5).

Section 6. The City of Fairbanks will review, revise, and re-adopt the MJ-HMP, in its entirety, every five years.

Section 7. This resolution is effective six days after adoption.

_____
Mindy O'Neall, Mayor

AYES:
NAYS:
ABSENT:
APPROVED:

ATTEST:

_____
D. Danyielle Snider, MMC, City Clerk

APPROVED AS TO FORM:

_____
Thomas A. Chard II, City Attorney

Fairbanks North Star Borough

DEPARTMENT OF EMERGENCY OPERATIONS
Nancy Durham

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2026 Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP) Update
Adopting Entity Summary Sheet

1. Purpose of the MJ-HMP Update

The 2026 Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP) Update establishes a coordinated, multi-agency strategy to reduce long-term risk to life, property, infrastructure, and essential services from natural hazards. It fulfills FEMA and State of Alaska requirements and maintains eligibility for Hazard Mitigation Assistance (HMA) funding programs.

2. Regulatory Requirement

- Required under the Disaster Mitigation Act of 2000 (DMA 2000).
- Must be updated every five (5) years and maintained annually.
- Required for eligibility to compete for FEMA Hazard Mitigation Assistance funding programs, including the Hazard Mitigation Grant Program (HMGP), Flood Mitigation Assistance (FMA), and other mitigation funding opportunities that may become available.

3. Participating and Adopting Jurisdictions

- Fairbanks North Star Borough (FNSB)
- City of Fairbanks
- City of North Pole
- Includes 15 Census-Designated Places (CDPs) and regional partners
- Supported by tribal organizations, utilities, state/federal agencies, and stakeholders

4. Hazards Addressed

Primary Natural Hazards:

- Wildfire (wildland fire and urban conflagration)
- Severe Weather (extreme cold, snow, freezing rain, wind)
- Flooding (riverine, ice jam, pluvial, winter flooding)
- Seismic Events (earthquakes, liquefaction)
- Ground Failure (permafrost degradation, subsidence, landslides)

Additional Considerations (Resilience):

- Power outages
- Supply chain disruptions
- Hazardous materials and infrastructure risks

Additional Hazards and Resilience Topics Evaluated

- Infrastructure Lifelines
- Supply Chain Resilience
- Social Vulnerability
- Future Conditions Analysis
- High Hazard Potential Dams (HHPD)
- Rain-in-Winter Events

5. Risk and Vulnerability Overview

The plan evaluates:

- Hazard probability and recurrence

- Geographic exposure
- Vulnerable populations (including socially vulnerable groups)
- Critical infrastructure and essential services

This risk-based approach supports data-driven mitigation priorities.

6. Mitigation Goals (2026 Update)

1. Protect life and public safety
2. Reduce damage to property and infrastructure
3. Improve resilience and continuity of operations
4. Promote hazard-aware planning and development
5. Increase public awareness and preparedness
6. Strengthen interagency coordination and partnerships

7. Mitigation Strategy and Actions

- 28 mitigation actions across all hazards
- Focus areas include:
    - Critical infrastructure protection
    - Emergency access and continuity
    - Risk-informed land use
    - Public preparedness and outreach
    - Interagency coordination

Actions are:

- Prioritized by risk reduction, feasibility, and cost-effectiveness

- Integrated into capital improvement plans, land use plans, and emergency operations

8. Planning Process (2026 Update)

- Led by the Fairbanks North Star Borough Department of Emergency Operations
- Multi-jurisdictional collaboration with the City of Fairbanks and City of North Pole
- Technical input from local, state, federal, utility, nonprofit, and academic partners
- Extensive public and stakeholder engagement including:
    - 3 public surveys
    - 2 stakeholder surveys
    - 4 public meetings
    - 3 open houses
    - 30-day public comment period
    - Agency and subject matter expert review

Participation Results

- 254 public survey responses
- 10 stakeholder survey responses
- 38 outreach activities
- 21 public comments reviewed and addressed in the final plan

9. Adoption and Approval Process

- State of Alaska Review: Completed August 4, 2026
- FNSB Planning Commission Recommendation: Approved July 28, 2026
- City of North Pole Adoption: August 17, 2026

- City of Fairbanks Adoption: August 24, 2026
- FNSB Assembly Public Hearing and Adoption: August 27, 2026
- FEMA Region 10 Final Review and Approval: Pending
- Current Plan Expiration Date: September 12, 2026

10. Plan Maintenance Requirements

- Annual review and progress reporting
- Ongoing updates to mitigation actions and priorities
- Full plan update every 5 years
- Continued public and stakeholder engagement

Maintains FEMA compliance and funding eligibility.

11. Implementation and Integration

The MJ-HMP will be integrated into:

- Comprehensive Emergency Management Plan (CEMP)
- Capital Improvement Plans (CIP)
- Land use and development regulations
- Hazard-specific plans
    - Community Wildfire Protection Plans (CWPPs)
- Infrastructure and resilience planning initiatives

Ensures coordinated, long-term risk reduction across jurisdictions.

12. Key Takeaways for Adopting Entities

- Adoption is required to maintain FEMA mitigation planning compliance and funding eligibility.
- The 2026 update reflects expanded FEMA and State of Alaska planning requirements.
- The plan establishes 6 mitigation goals and 28 mitigation actions to reduce long-term disaster risk.
- Adoption does not approve projects, appropriate funding, create regulations, or commit future expenditures.
- The plan provides a framework for future mitigation investments, grant applications, and resilience initiatives throughout the Borough and participating jurisdictions.

13. Recommended Action

Staff recommends adoption of the 2026 Multi-Jurisdictional Hazard Mitigation Plan Update by resolution.

Adoption will:

- Maintain FEMA compliance.
- Preserve eligibility for hazard mitigation funding opportunities.
- Support coordinated long-term risk reduction efforts.
- Strengthen community resilience across the Fairbanks North Star Borough region.



Multi-Jurisdictional Hazard Mitigation Plan

Fairbanks North Star Borough
City of Fairbanks
City of North Pole

Prepared by FNSB Emergency Management

Fairbanks North Star Borough

City of Fairbanks

City of North Pole

Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP) Update

Department of Emergency Operations

PO Box 71267, Fairbanks, AK 99707-1267

(907) 459-1481

August _, 2026

Mayor, Fairbanks North Star Borough

Grier Hopkins

Mayor, City of Fairbanks

Mindy O'Neall

Mayor, City of North Pole

Larry Terch III

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Luke Butcher

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Nancy Durham

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Juanita Frazier

Kim Streeter

Boston Thomas

This plan was prepared in coordination with participating jurisdictions, stakeholders, and partner agencies.

i: Acceptance Letter from FEMA Region 10

INSERT FEMA ACCEPTANCE LETTER HERE

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ii: FNSB Resolution No. 2026-_

INSERT FNSB RESOLUTION PAGE 1 HERE

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INSERT FNSB RESOLUTION PAGE 2 HERE

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iii: City of Fairbanks Resolution No. _

INSERT CITY OF FAIRBANKS RESOLUTION PAGE 1 HERE

DRAFT

INSERT CITY OF FAIRBANKS RESOLUTION PAGE 2 HERE

DRAFT

iv: City of North Pole Resolution No. _

INSERT CITY OF NORTH POLE RESOLUTION PAGE 1 HERE

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INSERT CITY OF NORTH POLE RESOLUTION PAGE 2 HERE

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1. Executive Summary

The 2026 Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP) Update was developed to meet the requirements of the Federal Emergency Management Agency (FEMA) and the Alaska Division of Homeland Security and Emergency Management (DHS&EM). The plan serves the communities of the Fairbanks North Star Borough (FNSB/Borough), the City of Fairbanks, and the City of North Pole and establishes coordinated, long-term strategies to reduce risk from natural hazards.

Hazard mitigation planning is a proactive process that identifies risks, assesses vulnerabilities, and prioritizes actions to reduce loss of life, property damage, and disruption to essential services. This update builds on the original 2014 MJ-HMP and the 2021 update, incorporating new data, stakeholder input, and observed changes in hazards, infrastructure, and community conditions since the prior plan cycle.

The overall purpose of the MJ-HMP is to:

- Protect public safety and prevent loss of life
- Reduce damage to existing and future development
- Protect the Borough's economic, cultural, and environmental assets
- Improve the resilience and continuity of infrastructure and essential services
- Reduce the costs and impacts of disaster response and recovery
- Support broader community goals, including infrastructure investment, land-use planning, and economic resilience

1.1 MJ-HMP Update Organization

The 2026 MJ-HMP Update begins with an overview of the planning process, followed by a community profile and comprehensive risk assessment. Individual hazard profile chapters describe each hazard's characteristics, historical occurrence, future probability, and potential impacts.

The plan addresses the Borough's primary natural hazards:

- Wildfire (wildland and urban conflagration)

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- Severe weather
- Flooding
- Seismic events
- Ground failure (including cryosphere-related hazards such as permafrost degradation)

Hazard profiles reflect current scientific understanding and updated datasets, including the integration of cryosphere hazards into ground failure to better represent the underlying processes affecting the Borough.

Chapter 10 presents the mitigation strategy, including existing capabilities, resources, funding mechanisms, progress since the 2021 update, and mitigation goals. Chapter 11 presents the Mitigation Action Plan.

1.1.1 Planning Process Summary

The MJ-HMP Update was developed through a multi-jurisdictional planning process coordinated by FNSB Emergency Management in partnership with the Cities of Fairbanks and North Pole, DHS&EM, and a wide range of stakeholders.

The planning team incorporated:

- Subject matter expertise from local, state, and federal agencies
- Technical data from the University of Alaska Fairbanks, State agencies, and federal partners
- Public input gathered through surveys, outreach events, public meetings, and a formal public review period

This update emphasizes changes in hazard conditions, infrastructure systems, and development patterns since 2014, ensuring the plan reflects current risks and community priorities. The plan will be reviewed annually and fully updated every five years in accordance with FEMA requirements.

Public and stakeholder input, including a formal 30-day public comment period, directly informed updates to the mitigation strategy and risk assessment (see Section 2.4 and Appendix D).

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1.1.2 Hazard Identification and Risk Assessment

The planning team evaluated previously identified hazards and confirmed that the following remain the primary natural threats to the Borough:

- Wildfire (wildland and urban conflagration)
- Severe weather
- Flooding
- Seismic events
- Ground failure (including landslides, erosion, subsidence, and permafrost degradation)

These hazards reflect the environmental conditions of Interior Alaska, including boreal forest fire regimes, extreme weather variability, riverine flooding, seismic activity, and widespread discontinuous permafrost.

The plan also identifies additional non-natural hazards, such as cyber incidents, hazardous materials releases, and long-term power outages, to support broader resilience planning, although FEMA risk assessment requirements focus on natural hazards.

The risk assessment includes:

- Historical hazard occurrences
- Geographic distribution of hazards
- Recurrence probability
- Vulnerability of population, infrastructure, and critical facilities

This analysis informs mitigation priorities and supports data-driven decision-making.

1.1.3 Mitigation Strategies

The MJ-HMP Update documents existing capabilities, regulations, programs, and resources available to each jurisdiction to reduce hazard risk. Based on this assessment, the planning team developed:

- 6 updated mitigation goals

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- 28 mitigation actions addressing multiple hazards and infrastructure systems

The Mitigation Action Plan identifies:

- Responsible agencies
- Implementation timelines
- Funding considerations
- Prioritization criteria (life safety, feasibility, cost, and multi-hazard benefits)

Mitigation strategies emphasize:

- Protection of critical infrastructure (roads, utilities, public facilities)
- Improved emergency access and continuity of services
- Risk-informed land use and development practices
- Coordination across jurisdictions and infrastructure partners

Mitigation actions will be integrated into capital improvement plans, land-use regulations, emergency response planning, and other local planning efforts.

1.1.4 Plan Review, Evaluation, and Implementation

This update reflects:

- Changes in development and infrastructure from 2014–2026
- Progress made on prior mitigation actions
- Updated hazard data and stakeholder priorities

The Borough and participating jurisdictions will:

- Conduct annual reviews of mitigation actions
- Track progress and update priorities
- Incorporate new data and lessons learned

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A full update will be completed every five years to maintain FEMA approval and eligibility for Hazard Mitigation Assistance funding.

1.1.5 Plan Adoption

The MJ-HMP Update was adopted by:

- The Fairbanks North Star Borough Assembly
- The City of Fairbanks
- The City of North Pole

Adoption ensures compliance with Alaska Statutes and FEMA requirements and enables continued access to federal and state mitigation funding programs.

Together, these strategies position the Fairbanks North Star Borough and participating jurisdictions to proactively reduce risk, protect critical infrastructure, and enhance long-term community resilience.

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2. Introduction

Hazard mitigation planning seeks to minimize the impacts of a natural disaster before it occurs by identifying and profiling local hazards, assessing vulnerability of communities and facilities, and identifying mitigation actions to reduce risk to life and property. Hazard mitigation includes sustained actions that reduce or eliminate long-term risk from natural hazards and their effects.[1]

Mitigation actions may include long-term capital improvement projects, policy changes to ordinances or existing plans, and public education and outreach. The goal of these actions is the long-term protection of people, property, and critical infrastructure.

This 2026 Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP) Update is jointly prepared by multiple jurisdictions within the boundaries of the Fairbanks North Star Borough (FNSB/Borough). The plan profiles five natural hazards: wildfire (wildland and urban conflagration), severe weather, flooding, seismic activity, and ground failure (including cryosphere-related processes). It assesses community vulnerability and risk associated with these hazards and presents mitigation strategies to reduce identified risks.

The overarching goal of this MJ-HMP Update is to reduce loss of life and property due to natural hazards and to increase community resilience through coordinated, long-term risk reduction strategies.

A Federal Emergency Management Agency (FEMA)-approved hazard mitigation plan enables the Borough and participating jurisdictions to access federal and state funding and technical assistance for mitigation activities. FEMA requires an approved mitigation plan as a condition for Hazard Mitigation Assistance (HMA) grant programs.[2]

The benefits of developing a multi-jurisdictional plan include:

- Improved communication and coordination among jurisdictions and other regional partners
- Comprehensive mitigation approaches addressing shared risks
- Resource and cost-sharing to improve efficiency and reduce duplication

[1] FEMA, *Hazard Mitigation Planning for Local Governments*: mitigation defined as sustained action to reduce long-term risk.

[2] FEMA, Hazard Mitigation Assistance eligibility requirements (approved plan prerequisite).

- Clear organizational structure and defined responsibilities across participating jurisdictions

2.1 Hazard Mitigation Planning Requirements

This MJ-HMP Update was prepared in coordination with the Alaska Division of Homeland Security and Emergency Management (DHS&EM) to meet the planning requirements of the Disaster Mitigation Act of 2000 (DMA 2000). This Federal law establishes mitigation planning requirements for state and local governments as a condition of receiving federal mitigation funding.[3]

FEMA's HMA programs provide funding for mitigation planning and project implementation intended to reduce long-term disaster risk. These programs include the Hazard Mitigation Grant Program (HMGP), the Pre-Disaster Mitigation (PDM) program (now largely replaced by the Building Resilient Infrastructure and Communities (BRIC) program), and the Flood Mitigation Assistance (FMA) program.[4]

These programs present opportunities to implement mitigation actions identified in this plan while reducing future reliance on federal disaster assistance. FEMA defines mitigation as actions that break the cycle of disaster damage, reconstruction, and repeated losses.[5]

In addition to meeting the DMA 2000 requirements, this plan also addresses the Local Flood Mitigation Plan requirements of the FMA grant program. The goal of the FMA grant program is to reduce or eliminate long-term risk of flood damage to structures insured under the National Flood Insurance Program (NFIP), with particular emphasis on repetitive loss (RL) and severe repetitive loss (SRL) properties.[6]

2.2 Planning Process and Methodology

As of January 2013, the FNSB did not have an official Hazard Mitigation Plan. Because the Borough, the City of Fairbanks, and the City of North Pole are all subject to natural hazard risk, a MJ-HMP was developed and adopted by resolution in 2014.

FEMA requires local hazard mitigation plans to be reviewed and updated every five years in order to remain eligible for Hazard Mitigation Assistance funding.[7] The first update to the

[3] Disaster Mitigation Act of 2000 (Public Law 106-390).

[4] FEMA Hazard Mitigation Assistance (HMA) Programs overview.

[5] FEMA Hazard Mitigation Assistance (HMA) Programs overview.

[6] FEMA Flood Mitigation Assistance (FMA) / NFIP purpose (repetitive loss reduction).

[7] 44 CFR §201.6 – Local mitigation plans must be reviewed, revised, and resubmitted for approval every five years.

FNSB MJ-HMP was adopted in 2021. A planning team (Table 2-1) was established for this update and includes representatives from the Borough, the City of Fairbanks, and the City of North Pole. This team provided oversight, technical input, and coordination throughout the planning process, ensuring representation from all participating jurisdictions.

Table 2-1: MJ-HMP Update Planning Team

Name	Organization
Nancy Durham	FNSB – Emergency Manager, Emergency Operations Center (EOC) Director, and Project Manager
Luke Butcher	FNSB – Director of Emergency Operations
Iain Miller	FNSB – Emergency Services Manager
Kuba Grzeda	FNSB – Chief of Staff
Amy Gallaway	FNSB – Deputy Chief of Staff
Tom Hewitt	FNSB – Special Assistant to the Mayor
Kaitlin Wilson	FNSB – Public Information Officer
Juanita Frazier	FNSB – Emergency Management Specialist
Boston Thomas	FNSB - Emergency Management Intern
Colby Kusinitz	FNSB – Former Emergency Management Coordinator
Kim Streeter	FNSB – Emergency Management Specialist / Former GIS Specialist
Daniel Weatherly	FNSB – Emergency Services GIS Tech
Mike Sanders	City of Fairbanks – Chief of Staff
Andrew Coccaro	City of Fairbanks – Fire Chief and Emergency Manager
Chad Heineken	City of North Pole – Fire Chief and Emergency Manager

Table 2-1 Note: Jurisdiction Points of Contact are highlighted.

In March 2024, the FNSB, in coordination with the Cities of Fairbanks and North Pole, expressed interest in a Hazard Mitigation Grant administered by the Alaska DHS&EM through FEMA's HMGP to update the MJ-HMP. The application packet for all three jurisdictions was finalized and submitted to the State in May 2025. Subsequent federal government shutdowns and reductions in HMGP funding delayed the State's ability to proceed with contracting for the update.

In fall 2025, after it became clear that there was no defined timeline for funding availability and that no extension of the existing plan would be granted, the FNSB Emergency Management Division initiated the update internally, beginning in December 2025.

The 2026 MJ-HMP Update was developed through a coordinated, multi-jurisdictional planning process led by the FNSB Emergency Management Division, with active participation from the City of Fairbanks, the City of North Pole, and Borough leadership. FNSB Emergency Management served as the lead agency and project manager, responsible for organizing

and facilitating all planning and Executive Group meetings, developing the project timeline, conducting stakeholder outreach and public engagement, administering and analyzing surveys, coordinating subject matter expert input, leading the GIS-based risk assessment and vulnerability analysis, and preparing all plan content, maps, and supporting materials. Participation from jurisdictional partners included regular attendance at Executive Group meetings, review of draft materials, and provision of technical, operational, and policy-level input. Representatives from the City of Fairbanks and City of North Pole contributed comments on hazards, vulnerabilities, and mitigation actions, supported public outreach events including open houses and stakeholder meetings, and participated in public engagement efforts. Borough staff and leadership further supported outreach, communications, and stakeholder coordination, including public meetings in North Pole, Fairbanks, and Ester, as well as engagement at community open houses. All participating jurisdictions provided ongoing feedback throughout the planning process and supported the development of mitigation strategies and the adoption of the plan, ensuring that the final MJ-HMP reflects shared priorities, local expertise, and a collaborative approach to hazard mitigation. Jurisdiction-specific participation activities are summarized in Table 2-2 and directly informed the mitigation strategy presented in Chapter 10.

Table 2-2: Jurisdiction Participation

Jurisdiction	Representative	Participation Activities
FNSB	Nancy Durham, Emergency Manager / Project Manager	Led and managed the entire MJ-HMP update process; coordinated and facilitated all planning and Executive Group meetings; developed project timeline; conducted stakeholder engagement and outreach activities; designed and distributed surveys and analyzed results; coordinated subject matter expert input; led risk assessment and mitigation strategy development; wrote and assembled the plan; coordinated GIS-based analysis and integration of vulnerability data; oversaw map production; managed plan website and public information; developed outreach materials and presentations; presented plan to boards, commissions, and councils.
FNSB	Kuba Grzeda, Chief of Staff	Participated in Executive Group meetings; provided review, coordination support, and policy-level input on plan development.
FNSB	Amy Gallaway, Deputy Chief of Staff	Participated in Executive Group meetings; attended Noel Wien Library open house; provided review and input on plan development.

Jurisdiction	Representative	Participation Activities
FNSB	Tom Hewitt, Special Assistant to the Mayor	Participated in Executive Group meetings; provided input and support during plan development.
FNSB	Kaitlin Wilson, Public Information Officer	Participated in Executive Group meetings; supported public outreach efforts; attended North Pole public meeting and Ester open house; coordinated communications and engagement activities.
City of Fairbanks	Mike Sanders, Chief of Staff	Participated in Executive Group meetings; provided detailed comments and policy input; assisted with Noel Wien Library open house; supported stakeholder engagement by bringing a City Council member to the stakeholder meeting.
City of Fairbanks	Chief Andrew Coccaro, Fire Chief / Emergency Manager	Participated in Executive Group meetings; provided technical and operational comments; assisted with Noel Wien Library open house; contributed emergency management expertise to plan development.
City of North Pole	Chief Chad Heineken, Fire Chief / Emergency Manager	Participated in Executive Group meetings; provided local jurisdiction input and technical comments; contributed to review of hazards, vulnerabilities, and mitigation actions.
City of North Pole	Mayor Larry Terch III, Mayor	Attended the North Pole public meeting; supported public engagement and community outreach efforts.

Table 2-2 Notes: All Executive Group meetings included active discussion, review, and comment on plan components, with participating jurisdictions providing ongoing support for plan development and adoption. FNSB Emergency Management staff provided technical, analytical, and administrative support, including research, GIS analysis, vulnerability assessments, mapping, and meeting coordination. Jurisdiction participation reflects continuous engagement throughout the planning process, including meetings, outreach events, surveys, and formal review.

In accordance with federal mitigation planning requirements, this MJ-HMP Update includes consideration of the 15 Census-Designated Places (CDPs) within the Borough. The plan incorporates information and strategies from existing federal, state, and local plans, as well as scientific data and technical studies from the University of Alaska Fairbanks, State of

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Alaska agencies, and the United States Geological Survey (USGS), consistent with FEMA mitigation planning guidance.[8]

During the review of existing plans and supporting documentation, the planning team identified supply chain disruption as an emerging risk not fully addressed in the Comprehensive Emergency Management Plan (CEMP). While supply chain disruption is not classified as a natural hazard under FEMA mitigation planning requirements, the planning team determined that it represents a significant community resilience issue due to its potential impacts on critical infrastructure and essential services. As a result, a Supply Chain Disruption Annex (Annex 1) was developed to supplement this MJ-HMP.

A full list of resources used in plan development is provided in Section 2.3. The planning team also incorporated input from a wide range of stakeholders; a complete list of participating organizations is provided in Appendix A, Section A.1.

This MJ-HMP Update applies to the entire Borough. Information specific to the City of Fairbanks and the City of North Pole is incorporated into the community profiles, hazard profiles (Tables 4-1 and 4-12), and the Mitigation Action Plan (MAP) (Tables 11-1 to 11-7).

The planning team was formally convened between December 15, 2025, and January 30, 2026, to review prior mitigation planning efforts and establish a schedule for completing the update. The team developed a process for drafting and reviewing hazard profiles, conducting vulnerability analysis, and preparing the updated MAP.

On February 12, 2026, the planning team held a stakeholder meeting with representatives from utilities, local businesses, and organizations responsible for critical facilities and infrastructure. Participants provided input on hazard risks, vulnerabilities, and potential mitigation actions.

Following the stakeholder meeting, the project manager distributed a request for progress updates on mitigation actions identified in the 2021 MJ-HMP. This request was sent to planning team members and key stakeholder organizations with a response deadline of March 13, 2026. These updates were compiled and used to inform the development of the mitigation strategy. Key stakeholder organizations that contributed to the plan are listed in Table 2-3 and represent critical infrastructure providers, public agencies, and community partners whose input informed the risk assessment and mitigation strategy.

[8] FEMA Hazard Mitigation Planning guidance (risk-based planning, use of best available data and studies).

Table 2-3: Key Stakeholder Organizations

Organization
Alaska Center for Climate Assessment and Preparedness/University of Alaska Fairbanks
Alaska Department of Environmental Conservation
Alaska Department of Health, Public Health Nursing
Alaska Department of Transportation and Public Facilities
American Red Cross
Aurora Energy
Bureau of Indian Affairs
Chena Goldstream Fire and Rescue
City of Fairbanks
City of North Pole
Ester Volunteer Fire Department
Fairbanks Fire Department
Fairbanks North Star Borough
Fairbanks Resource Agency
Fort Wainwright
Foundation Health Partners
Interior Gas Utility
Interior Region Emergency Medical Services Council, Inc.
North Pole Fire Department
North Pole Police Department
North Star Volunteer Fire Department
Northern Alaska Region, Volunteers Active in Disaster
Steese Volunteer Fire Department
Tanana Chiefs Conference
University of Alaska Fairbanks
University Police Department
Volunteers in Policing

In March 2026, the Emergency Management Division collaborated with the FNSB Geographic Information System (GIS) Specialist and GIS Tech to conduct a GIS-based risk assessment and hazard exposure analysis, supporting the identification of vulnerable populations, infrastructure, and critical facilities.

The planning team convened again on February 26, 2026, to review progress on mitigation and discuss updates to the mitigation strategy. Responsibilities for drafting and revising plan sections were assigned to team members.

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On March 5, 2026, subject matter experts (Table 2-4) were engaged to review technical information, validate hazard data, and provide specialized expertise that informed hazard profiles and risk analysis presented in Chapter 4.

Public and stakeholder input was collected through a series of web-based surveys. An initial set of surveys was distributed between February 6 and March 18, 2026, followed by additional surveys conducted between March 19 and April 24, 2026. A targeted hazard ranking survey was conducted from April 8 to April 30, 2026. Input received through these efforts was used to validate hazard identification and inform prioritization of mitigation actions included in Chapter 11.

Table 2-4: Subject Matter Experts

Name/Title	Organization	Area(s) of Expertise
Margaret M. Darrow Professor/Chair of Civil, Geological, and Environmental Engineering	University of Alaska Fairbanks College of Engineering and Mines	Engineering (Ground Failure, Cryosphere)
Michael "Mike" West Alaska State Seismologist and Research Professor	University of Alaska Fairbanks Geophysical Institute Alaska Earthquake Center	Earth Science (Seismology)
Dr. Carl Tape Professor of Geophysics	University of Alaska Fairbanks Geophysical Institute College of Natural Science and Mathematics Department of Geosciences	Earth Science (Seismology)
Randi Jandt Fire Ecologist	University of Alaska Fairbanks International Arctic Research Center Alaska Fire Science Consortium	Ecology (Alaska Fire Ecology, Tundra Fire, Fire Management, Wildlife Biology)
Richard "Rick" Thoman Alaska Climate Specialist	University of Alaska Fairbanks International Arctic Research Center Alaska Center for Climate Assessment and Preparedness	Atmospheric and Space Science (Alaska Climate and Weather) Earth Science

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Name/Title	Organization	Area(s) of Expertise
Ed Plumb Weather and Flood Hazards Specialist	Alaska Center for Climate Assessment and Preparedness (ACCAP) International Arctic Research Center, University of Alaska Fairbanks	Climate Adaptation, Climatology, Community Adaptation, Meteorology, Science Engagement, Sea Ice Research
Jason Laney Warning Coordination Meteorologist	National Weather Service Weather Forecast Office (WFO) Fairbanks Office	Weather
Crane Johnson Senior Hydrologist, Alaska-Pacific River Forecast Center	National Weather Service Anchorage Office	Hydrology
Jason Sakalaskas Maintenance and Operations Chief	Alaska Department of Transportation and Public Works Northern Region Maintenance and Operations	Road Maintenance and Construction
Ron Davis Fairbanks District Superintendent	Alaska Department of Transportation and Public Works Northern Region Maintenance and Operations	Road Maintenance and Construction
Rob Allen Fire Management Officer	Alaska Division of Forestry and Fire Protection Fairbanks/Delta Area Fairbanks Office	Fire Management
Jake Livingston Statewide Fire Operations Chief	Alaska Division of Forestry and Fire Protection State Fire Operations	Fire Management

The FNSB Emergency Management Division compiled stakeholder input, conducted analysis, and prepared the draft MJ-HMP Update and appendices. Final formatting and review were completed in May 2026, and the draft plan was submitted to the State of Alaska for formal review on June 1, 2026.

Public outreach and stakeholder engagement were conducted as an iterative process integrated throughout plan development, consistent with FEMA mitigation planning requirements and documented in Section 2.4 and Appendix B.

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2.3 Plan Development Resources

The planning team reviewed a range of existing plans, studies, reports, and technical data sources during development of this MJ-HMP Update. These resources were used to inform the community profile, risk assessment, hazard identification, and mitigation strategy.

The planning team evaluated existing data, identified shared objectives across jurisdictions, and incorporated relevant findings and ongoing initiatives into this plan. The following resources were used in the development of this update:

Federal Guidance and Regulatory Framework

- Federal Emergency Management Agency (FEMA). *Local Mitigation Planning Handbook* (2025).
- FEMA. *Local Mitigation Planning Policy Guide* (FP-206-21-002, 2025).
- FEMA. *Understanding Your Risks: Identifying Hazards and Estimating Losses* (FEMA 386-2, 2001).
- U.S. Department of Homeland Security. *Comprehensive Preparedness Guide (CPG) 201: Threat Hazard Identification and Risk Assessment (THIRA) / Stakeholder Preparedness Review (SPR) Guide*, 3rd Edition (2018).

State and Regional Plans

- Alaska Division of Homeland Security and Emergency Management (DHS&EM). *State Hazard Mitigation Plan* (2023).
- Alaska Division of Homeland Security and Emergency Management (DHS&EM). *State Hazard Mitigation Plan* (2018).
- Alaska Wildland Fire Coordinating Group. *Alaska Interagency Wildland Fire Management Plan* (2010).

Local Plans and Studies

- Fairbanks North Star Borough. *Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP)* (2014).
- Fairbanks North Star Borough. *Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP) Update* (2021).

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- Fairbanks North Star Borough. *Community Wildfire Protection Plans (CWPP)* (2025).
- Fairbanks North Star Borough. *Comprehensive Emergency Management Plan (CEMP)* (2026).
- Fairbanks North Star Borough. *Regional Comprehensive Plan* (2005).
- City of North Pole. *Land Use Plan* (2010).
- Agnew::Beck Consulting. *Salcha-Badger Road Area Plan* (2019).
- Applied Development Economics, Inc., *Comprehensive Economic Development Strategy (CEDS)* (2016).
- TriData Division. *Comprehensive Review of Emergency Medical Services* (2011).
- Agnew::Beck Consulting. *Senior Needs Assessment* (2019).

Scientific and Technical Studies

- Péwé, T.L. *Geologic Hazards of the Fairbanks Area* (Alaska Division of Geological and Geophysical Surveys (DGGS) Special Report 15, 1982).
- Rice, E.F. *Building in the North*, 5th Edition (2008).
- Markon, C.J., Trainor, S.F., and Chapin, F.S. (eds.). *Alaska Regional Climate Assessment* (USGS Circular 1379, 2012).
- Wendler, G., and Shulski, M. "A Century of Climate Change for Fairbanks, Alaska." *Arctic* (2009).
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- Johnstone, J.F., et al. "Fire, Climate Change, and Forest Resilience in Interior Alaska." (2010).

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- Gaglioti, B.V., et al. "Boreal Forest Wildfire Regime Change." *The Holocene* (2016).
- Alaska Center for Climate Assessment and Preparedness (ACCAP). *Winter Rain in Interior Alaska: Community Impacts, Effective Responses, and Policy Implications.* University of Alaska Fairbanks, Spring 2026.

Hazard-Specific Technical References

- Tape, C., et al. "The 1904 Earthquake in Central Alaska." *Bulletin of the Seismological Society of America* (2017).
- Berg, E., et al. *1967 Fairbanks Earthquakes and Aftershocks* (UAF Geophysical Institute).
- St. Armand, P. "Central Alaska Earthquake Swarm of 1947." (1948).
- Alaska Seismic Hazards Safety Commission. *Earthquake Monitoring Report* (2016).
- Darrow, M.M., and Schwarber, J. *Landslides in the FNSB* (2019).
- BBFM Engineers, Inc. *School Seismic Vulnerability Assessment* (2017).
- Furrh, J.T. *Small-Scale Flooding in Fairbanks* (National Oceanic and Atmospheric Administration (NOAA), 2018).

Data Sources and Tools

- Alaska Interagency Coordination Center (AICC) / Alaska Fire Service (AFS) fire occurrence and perimeter datasets
- Scenarios Network for Alaska and Arctic Planning (SNAP)
- Alaska Center for Climate Assessment and Preparedness (ACCAP)
- UAF Institute of Northern Engineering – Cold Climate Housing Research Center (CCHRC)
- U.S. Geological Survey (USGS) – Hazard and earthquake data
- Alaska Earthquake Center (UAF Geophysical Institute)

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- Alaska Climate Research Center (ACRC)
- CDC Social Vulnerability Index (SVI)
- Alaska Department of Commerce, Community and Regional Affairs (DCCRA) GIS data portal

2.4 Public Involvement

Public involvement is a critical component of the hazard mitigation planning process, ensuring that community concerns, local knowledge, and stakeholder priorities are incorporated into the plan. The FNSB, in coordination with the Cities of Fairbanks and North Pole, conducted a comprehensive public engagement process throughout the development of the 2026 MJ-HMP Update. Public outreach included social media campaigns, stakeholder briefings, and a series of community and stakeholder surveys conducted between February and April 2026. In total, 254 community responses and 10 stakeholder responses were collected. These efforts were supplemented by 14 social media posts generating 22,143 views and 165 interactions.

Outreach efforts were designed to provide multiple opportunities for participation and included stakeholder meetings, executive-level coordination meetings, public meetings, open house events, advisory committee briefings, and a formal 30-day public comment period. Engagement methods included social media outreach, local media coverage, and distribution of informational materials, including public meeting, open house, and public comment flyers.

A total of 38 outreach activities were conducted between February and August 2026, providing iterative opportunities for input throughout the planning process and supporting engagement at key milestones including hazard identification, risk assessment, mitigation strategy development, and plan adoption.

Public outreach activities, meeting materials, and documentation of participation are provided in Appendix B and support the public involvement process summarized in Sections 2.4.1 through 2.4.4.

2.4.1 Public Notification

The Borough Public Information Officer issued a press release on February 6, 2026, announcing the initiation of the MJ-HMP Update. A dedicated project webpage (https://www.fnsb.gov/mjhmp) was established to provide access to planning documents, meeting schedules, public comment forms, and updates throughout the planning process.

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The project webpage served as the primary information hub throughout the planning process, supporting survey distribution and public engagement activities across multiple phases.

Public notification for meetings, open houses, and the 30-day public comment period included coordinated social media campaigns, local media coverage (including newspaper and television), and widespread posting of flyers at high-visibility community locations. Flyers and notices were distributed across libraries, community centers, local businesses, post offices, and public facilities throughout the Borough to ensure broad public awareness.

2.4.2 Stakeholder Engagement

The planning team conducted targeted outreach to government agencies, utilities, nonprofit organizations, and entities responsible for critical infrastructure.

Presentations and stakeholder briefings were conducted with the following bodies:

- ★ Planning Commission – March 10, 2026
- ★ Fairbanks Local Emergency Planning Committee (FEPC) – April 22, 2026
- ★ Regional Emergency Services Advisory Committee (RESAC) – May 18, 2026

These meetings provided updates on plan development and allowed stakeholders to provide input on hazard identification, risk concerns, and mitigation priorities.

These efforts resulted in 10 stakeholder survey responses and additional qualitative input that informed capability assessments, infrastructure needs, and mitigation feasibility considerations.

In addition to formal stakeholder briefings, engagement included coordination with advisory bodies such as the FEPC and the RESAC, as well as ongoing input through stakeholder meetings conducted throughout the planning process.

2.4.3 Surveys and Public Input Tools

The planning team implemented a multi-phased survey strategy to gather input from community members and stakeholders at key stages of plan development. Surveys conducted between February and April 2026 included three community surveys and two stakeholder surveys.

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Community Survey #1 (February 2026), which focused on hazard awareness, past impacts, and preparedness challenges, received 153 responses. Community Survey #2 (March–April 2026) gathered input on mitigation priorities, preferred strategies, and implementation concerns, with 47 responses. Community Survey #3 (April 2026) validated hazard rankings and received 44 responses, confirming alignment between technical risk analysis and community perception.

In total, the surveys generated 254 community responses and 10 stakeholder responses, providing a robust dataset representing diverse geographic areas, populations with access and functional needs, and both urban and rural residents.

Survey distribution was supported through coordinated outreach, including social media campaigns, Borough communication channels, and direct stakeholder engagement. Across all outreach efforts, 14 social media posts generated 905 reach, 22,143 views, and 165 interactions, supporting broad participation.

Survey results directly informed hazard identification, vulnerability assessment, and the development and prioritization of mitigation actions presented in Chapter 4 and Chapter 11.

Additional documentation of outreach activities is provided in Appendix B, and detailed survey instruments and results are included in Appendix C.

In addition to surveys, public comment forms were made available online and in hard copy throughout the Borough. Printed draft plan materials and comment forms were placed at accessible locations, including the FNSB Clerk's Office, City of Fairbanks Clerk's Office, City of North Pole Clerk's Office, Noel Wien Library, North Pole Library, Haystack, and Emergency Operations office to ensure participation from residents without reliable internet access.

2.4.4 Public Review of Draft Plan

The draft MJ-HMP Update was available for public review and comment from May 30, 2026, through June 28, 2026, constituting a formal 30-day public comment period. The draft plan was made available online on the project website and in print at multiple public locations throughout the Borough, including libraries and public offices. Public comment forms were provided both online and in hard copy to maximize accessibility.

Public Open Houses were conducted to encourage participation and provide opportunities for in-person review and comment submission:

- June 2, 2026 – North Pole Library (5:00 p.m. – 7:00 p.m.)
- June 3, 2026 – Noel Wien Library (5:00 p.m. – 7:00 p.m.)

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- June 4, 2026 – Ester Volunteer Fire Department (6:00 p.m. – 8:00 p.m.)

These events were held at geographically dispersed locations to ensure accessibility across the Borough and to support engagement from a broad range of community members.

Outreach for the public review period included a coordinated campaign of social media posts, news media coverage, and widespread distribution of physical flyers. Flyers for both the open houses and the 30-day public comment period were posted at numerous locations across the Borough, including community bulletin boards, libraries, local businesses, post offices, and other frequently visited public spaces to maximize awareness and ensure accessibility for residents who may not engage through digital platforms.

Public comments received during the 30-day review period were compiled, reviewed, and evaluated by the planning team in coordination with participating jurisdictions. A total of 21 comments were received from agency partners, subject matter experts, and members of the public.

Comments primarily focused on improving technical clarity, strengthening hazard characterization (particularly severe weather and winter rain events), enhancing the Mitigation Action Plan (MAP) to better align with FEMA requirements, incorporating updated datasets (including Social Vulnerability Index data), and improving overall document organization and usability.

All comments were addressed and incorporated into the final plan as appropriate, resulting in substantive improvements to plan quality, technical accuracy, and implementability. A detailed Public Comment Summary and Response Matrix, including a synthesis of key themes, outcomes, and resulting plan improvements, is provided in Appendix D.

This process ensured compliance with FEMA requirements for public participation (44 CFR §201.6) and supported final plan revisions prior to adoption, as described in Section 2.6.

2.4.5 Previous Plan Outreach (2021 Update)

Public outreach efforts during the 2021 MJ-HMP Update included media engagement, public meetings, and online information-sharing. These efforts included interviews with local media outlets, public presentations, and distribution of informational materials through Borough communication channels.

These prior efforts helped inform continued outreach strategies for the 2026 update.

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2.4.6 Ongoing Public Involvement

The Borough will continue to involve the public in the implementation and maintenance of the MJ-HMP.

A current copy of the adopted plan and future updates will be maintained:

- On the Borough website
- At FNSB Planning and Emergency Operations offices
- At the City of Fairbanks and the City of North Pole offices
- At public libraries, including North Pole and Noel Wien

Annual review reports and plan updates will also be made available to the public.

Detailed documentation of outreach activities, including meeting records, outreach materials, flyer distributions, and social media metrics, is provided in Appendix B.

2.5 Review, Evaluation, and Implementation of the 2021 MJ-HMP

To remain an effective tool for reducing risk from natural hazards, a hazard mitigation plan must reflect current conditions, priorities, and community capabilities. The update process provides an opportunity to evaluate progress made under the previous plan, assess the effectiveness of mitigation actions, and revise strategies to address changing risks and development patterns.

The 2026 update reflects changes in hazard data, development trends, vulnerability conditions, and mitigation priorities since adoption of the 2021 MJ-HMP.

The planning team reviewed the 2021 MJ-HMP to evaluate the status of previously identified mitigation actions, assess progress toward established goals, and determine the continued relevance of those actions. This evaluation considered project implementation progress, changes in hazard conditions, and evolving community priorities. The results of this review informed the development of the updated mitigation strategy presented in Chapter 10.

As part of this update, the planning team assessed current development patterns and trends across the Borough, the City of Fairbanks, and the City of North Pole. This assessment supported the identification of changes in exposure and vulnerability and helped ensure that mitigation actions reflect current and future risk conditions.

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The planning team made several updates to the organization and prioritization of hazards in the 2021 plan. Cryosphere-related hazards, including permafrost degradation, were incorporated into the ground failure hazard category. These processes directly affect ground stability, resulting in subsidence, settlement, slope instability, and damage to infrastructure. Consolidating these hazards improves clarity, reduces redundancy, and more accurately reflects the physical mechanisms affecting the Borough.

In addition to the five natural hazards addressed in this plan, the planning team evaluated a broader range of risks affecting the community. Several technological and human-caused hazards were identified as important considerations due to their potential impacts on infrastructure systems, public health, and economic stability. These hazards are not included as profiled hazards in this MJ-HMP but were evaluated to support broader emergency management planning and coordination with the Comprehensive Emergency Management Plan (CEMP).

These considerations include:

- Cyber incidents affecting critical infrastructure and government systems
- Hazardous materials and energy-related incidents, including liquefied natural gas (LNG)
- Long-term power outages affecting utilities, communications, and essential services
- Supply chain disruptions affecting the availability of food, fuel, and critical supplies
- Intentional acts, including active threat incidents affecting public safety and critical facilities

Long-term power outages and supply chain disruptions were further evaluated as community resilience risks due to the Borough's geographic isolation and reliance on critical infrastructure systems. While these hazards are not classified as natural hazards under FEMA mitigation planning requirements, their potential impacts on essential services, lifelines, and community resilience were considered in coordination with the CEMP and supporting annexes.

The mitigation strategy was updated from the 2021 plan to better align with the 2023 Alaska State Hazard Mitigation Plan. This alignment emphasizes an all-hazards approach and prioritizes actions that reduce risk across multiple hazard types.

The planning team also updated the mitigation strategy to improve flexibility, allowing participating jurisdictions and critical infrastructure partners to pursue a broader range of

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mitigation projects and funding opportunities. This approach supports implementing scalable, multi-benefit projects that enhance overall community resilience.

2.6 Plan Adoption and Approval

The FNSB, City of Fairbanks, and City of North Pole formally reviewed and adopted the 2026 MJ-HMP Update in accordance with local procedures and FEMA requirements.

The Project Manager presented the draft MJ-HMP Update to the FNSB Planning Commission on March 10, 2026. The Planning Commission reviewed the plan and provided no additional recommendations.

The Project Manager presented the MJ-HMP Update to the FNSB Planning Commission on July 28, 2026. The Planning Commission reviewed and approved the plan.

The MJ-HMP Update was introduced on the FNSB Assembly Consent Calendar and was formally adopted by the FNSB Assembly on August 13, 2026, by Resolution No. [INSERT].

The Project Manager presented the MJ-HMP Update to the Fairbanks City Council during a work session on August 4, 2026. Following review and consideration, the Fairbanks City Council formally adopted the MJ-HMP on August 10, 2026, by Resolution No. [INSERT].

The Project Manager presented the MJ-HMP Update to the North Pole City Council on August 3, 2026. Following review and consideration, the North Pole City Council formally adopted the MJ-HMP on August 17, 2026, by Resolution No. [INSERT].

The plan, updated to reflect stakeholder and public input, was submitted to the Alaska DHS&EM for State review on July 1, 2026. DHS&EM transmitted the plan to FEMA Region 10 on July 31, 2026, for federal review and approval. FEMA Region 10 approved the MJ-HMP Update on September 12, 2026.

Figure 2-1 illustrates the hazard mitigation plan review, approval, and adoption process, including coordination between local jurisdictions, the State of Alaska, and FEMA.

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Figure 2-1: Hazard Mitigation Plan Approval and Adoption Process



2.6.1 Plan Integration

The 2026 MJ-HMP Update will be incorporated into existing planning and policy documents as appropriate, based on each document's update cycle. This integration ensures consistency between hazard mitigation strategies and broader community planning efforts and supports implementation through established regulatory, capital planning, and policy frameworks, as summarized in Table 2-5. These integration efforts are further supported by the mitigation strategy described in Chapter 10, which identifies actions, capabilities, and implementation mechanisms aligned with existing plans and programs.

Table 2-5: Existing Plans and Codes

Applicable Plans	Completed	Next Review
FNSB Capital Improvement Program (CIP), 10-Year Plan	02/22/2024	Every 10 years
FNSB Capital Improvement Program (CIP),	02/27/2025	Biennially
FNSB Community Wildfire Protection Plan (CWPP)	06/26/2025	As needed
FNSB Comprehensive Economic Development Strategy Update, 2022-2027	09/08/2022	Every 5 years
FNSB Comprehensive Economic Development Strategy (CEDS) Update	June 2026	As needed
FNSB Comprehensive Emergency Management Plan (CEMP)	04/09/2026	Every 5 years
FNSB Comprehensive Review of Emergency Medical Services (EMS)	2011	As needed
FNSB Comprehensive Road Plan	April 2024	≥20 years (maps every 10 years)
FNSB Legislative Priorities (LP)	Annually	Annually
FNSB Regional Comprehensive Plan	2005	In progress (started 2024)
FNSB Floodplain Regulations (FNSBC 15)	2020	As needed
FNSB Subdivision Ordinance (FNSBC 17)	01/15/2026 update	As needed
City of Fairbanks Emergency Operations Plan (EOP)	09/08/2025	Annually
City of Fairbanks Information Technology Disaster Recovery Plan	December 2025	As needed
City of Fairbanks International Building Code (IBC) 2018 Edition	04/17/2021	2024 Edition In Progress
City of North Pole Emergency Operations Plan (EOP)	2014	Annually
City of North Pole International Building Code (IBC) 2018 Edition	February 2022	As needed
North Pole Land Use Plan	01/28/2010	As needed
Fairbanks & North Pole Storm Water Management Plan	February 2019	As needed
Fairbanks & North Pole Storm Water Management Program Guide, 5th Edition	June 2019	As needed

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Integration by Jurisdiction

Each participating jurisdiction integrates the mitigation strategy into its existing planning mechanisms in a manner consistent with its authority, responsibilities, and operational structure. The following describes how each jurisdiction incorporates hazard mitigation actions into relevant plans, programs, and decision-making processes.

Fairbanks North Star Borough (FNSB)

The FNSB integrates mitigation actions from this plan into Borough-level planning mechanisms through established administrative, planning, and capital improvement processes. Hazard mitigation considerations are incorporated into the Comprehensive Plan, capital improvement planning, subdivision review, zoning decisions (Title 18), and floodplain management (Title 15). The FNSB Community Planning and Emergency Operations Departments coordinate to ensure that hazard risk information and mitigation priorities are considered during project planning, grant development, and review of development proposals. Mitigation actions identified in the MAP are incorporated into capital project scoping, particularly for infrastructure, drainage, and transportation-related improvements. The Borough also integrates mitigation into emergency planning documents, including the Comprehensive Emergency Management Plan (CEMP), Continuity of Operations (COOP) planning, and post-disaster recovery planning. Where regulatory authority is limited, particularly in unincorporated areas, integration occurs through coordination with service areas, utilities, and partner agencies, as well as through public outreach and voluntary mitigation programs.

City of Fairbanks

The City of Fairbanks integrates mitigation actions into municipal planning and operations through its building code enforcement, permitting processes, capital improvement planning, and departmental work plans. The City applies adopted building codes, including the International Building Code (IBC), to ensure that new development and redevelopment incorporate hazard-resistant design and construction practices. Mitigation actions identified in the MAP are considered during capital project development, particularly for public facilities, transportation infrastructure, utilities, and emergency services. The City's public works, fire, and emergency management functions incorporate mitigation priorities into project planning, maintenance, and upgrades. The City also integrates hazard mitigation into emergency response and continuity planning, including emergency operations planning and coordination with Borough and regional partners. Participation in mitigation grant programs and interagency coordination efforts further supports the implementation of mitigation actions identified in the MAP.

City of North Pole

The City of North Pole integrates mitigation actions into municipal planning and operations through its building code enforcement, permitting processes, capital improvement planning, and infrastructure management activities. The City enforces adopted building codes, including the IBC, to promote resilient construction and reduce risk from identified hazards. Mitigation actions from the MAP are incorporated into the planning and implementation of local infrastructure projects, including roads, utilities, and public facilities. City departments consider hazard risk when prioritizing maintenance, upgrades, and capital investments. The City integrates mitigation into emergency response planning and coordination with the FNSB, state agencies, and local partners. Participation in joint planning efforts, including hazard mitigation planning updates and grant-funded projects, supports implementation of mitigation actions identified in this plan.

2.7 Plan Monitoring, Evaluation, and Updating

Disaster Mitigation Act planning regulations[9] require an explicit monitoring, evaluation, and updating process that includes:

- A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle;
- A mechanism for participating jurisdictions to incorporate the requirements of the mitigation plan into other planning documents, when appropriate; and
- A public participation strategy for the plan maintenance process.

Plan monitoring will be carried out by the FNSB Emergency Management Division, representatives from the cities of Fairbanks and North Pole, and hazard mitigation plan stakeholders, via an annual review questionnaire and progress reports (see Appendix A, Plan Maintenance Documents, Sections A.2 and A.3) from agencies and departments in participating jurisdictions. Multi-jurisdictional plans require that implementation in each participating jurisdiction must be individually reviewed and documented. The annual progress reports will be compiled by FNSB Emergency Management and provided to FNSB directors and representatives from the cities of Fairbanks and North Pole for review of the following:

- Timely compliance with mitigation requirements

[9] 3 DMA §201.6(C)(4)(I)

- Procedural efficiency
- Public outreach during the implementation of mitigation actions
- Updates of hazard profiles and activity
- Updates to the vulnerability analysis regarding new critical facilities or infrastructure
- Changes in development patterns
- New resources available to implement mitigation planning
- Present goal applicability
- Progress of mitigation plan actions
- Prioritization of existing or additional mitigation measures revised as necessary.

The review questionnaire and progress report will be submitted to FNSB Emergency Management two months prior to the scheduled planning meeting date. A compiled report will be submitted to the Borough Assembly and the Fairbanks and North Pole City Councils and will be made public.

While annual reviews and minor updates are completed as needed, the HMP will undergo major revisions, updates, and resubmission to FEMA every 5 years to maintain grant eligibility. These five-year updates will demonstrate progress in hazard mitigation and risk reduction over time and will not be an appendix to the approved plan. Instead, the updates will stand on their own.

Figure 2-2 illustrates the five-year hazard mitigation planning cycle, including annual review, monitoring, and update activities that ensure the plan remains current and actionable.

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Figure 2-2: Five-Year Hazard Mitigation Planning Cycle



Source: Fairbanks North Star Borough Department of Community Planning, "Hazard Mitigation Plan: A Multi-Hazard, Multi-Jurisdictional Plan for the Fairbanks North Star Borough and its Communities," 1/27/2014

2.7.1 Arctic Urban Risks and Adaptations Project

The FNSB is one of three participating communities in the University of Alaska's National Science Foundation-funded "Arctic Urban Risks and Adaptations (AURA) project." The AURA project (https://iseralaska.org/aura/) will broaden understanding of natural hazards and their impacts on the people, economy, environment, and infrastructure of the borough. The project provides a great opportunity to increase public participation in the next planning cycle. It will inform the next required update of the Hazard Mitigation Plan. During each annual review and minor update of the plan maintenance cycle, the planning team will incorporate AURA products such as risk assessments, spatial data, survey results, data, economic costs, citizen science, and other findings.

The 4-year AURA project started in September 2020 with the following goals and objectives:

AURA Goals:

- Work with communities to assess wildfire, permafrost, and rain-in-winter hazards and risks as they have changed since 1980 and are projected to change over the next four decades.
- Estimate the public and private costs associated with these hazards and actions taken to mitigate or adapt to them.
- Work with government employees, Non-Governmental Organizations (NGOs), and tribal Entities to learn how communities are adapting to and mitigating these changing hazards, how the hazards may interact with each other to cause cumulative effects, and help develop a vision for improving future adaptation.

AURA Objectives:

- Develop spatial models and maps of wildfire, permafrost thaw, and rain-in-winter hazards and their potential interactions.
- Gather data with interviews, property owner surveys, and citizen science to assess perceived risks, values at risk, and adaptation costs.
- Model the risks and associated economic costs of these natural hazards and adaptation and mitigation actions.
- Develop, in a series of scenario planning workshops, an adaptive policy framework that city planners and others can use to adapt to and mitigate multiple hazards and reduce future risks and costs.

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The National Science Foundation–funded AURA project concluded its primary research phase after completing its planned four-year scope of work. At the conclusion of the grant period, responsibility for maintaining, hosting, and disseminating AURA project outputs transitioned to the University of Alaska's Institute of Social and Economic Research (ISER). Key AURA products—including spatial hazard data, risk visualizations, economic analyses, and scenario-planning tools—remain publicly accessible through ISER and affiliated platforms, ensuring continued availability of project findings for local governments, planners, and the public.[10]

Following the completion of the research phase, ISER and project partners launched platforms such as "Respond to Risk" to support ongoing use and application of AURA data and tools by communities and decision-makers. These resources are intended to translate AURA findings into practical applications for hazard mitigation, land-use planning, and adaptation decision-making. Fairbanks North Star Borough Emergency Management will continue to reference and utilize available AURA and Respond to Risk products during plan maintenance activities and future hazard mitigation planning efforts, leveraging the completed research to inform locally relevant, data-driven mitigation strategies.[11]

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[10] Arctic Urban Risks and Adaptations (AURA), Institute of Social and Economic Research: https://iseralaska.org/aura/

[11] Arctic Urban Risks and Adaptations (AURA), Institute of Social and Economic Research: https://iseralaska.org/aura/

3. Community Profile

The FNSB is located in the heart of Interior Alaska and is the second-largest population center and fourth-largest borough in the state. The FNSB encompasses 7,361 square miles of land and 77.8 square miles of water. It serves as the hub for the Interior and northern half of the state with large regional hospitals, health centers, and road, rail, and air connections to the rest of Alaska and the Lower 48. It is also home to an Army base, an Air Force base, and the state's oldest and second-largest university campus.

The Borough's two incorporated cities, Fairbanks and North Pole, are located about 14 miles apart in the west-central portion of the FNSB, on the alluvial plain between the Chena and Tanana Rivers. The cities are situated at an elevation of approximately 440 feet above sea level and are surrounded by the Tanana Valley with rolling hills to the north, east, and west. Immediately surrounding the cities are 15 unincorporated Census-Designated Places (CDP) with strong community identities, as well as the Fort Wainwright Army Post (Fort Wainwright) and Eielson Air Force Base (Eielson AFB) military installations. The Borough includes two incorporated cities and multiple CDPs, reflecting a mix of urban, suburban, and rural development patterns across the planning area, as summarized in Table 3-1. The geographic context of the Borough, including its location within Interior Alaska and its relationship to surrounding communities and transportation corridors, is illustrated in Figure 3-1.

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Table 3-1**: Incorporated Cities, Census-Designated Places (CDP), and** Recognized Communities in the FNSB

Jurisdiction	Classification	Form of Government	Population (2020 Census / State Estimates)[12]
FNSB	2nd Class Borough, Incorporated 1964	Strong Mayor	97,083
Fairbanks	Home Rule City, Incorporated 1903	Strong Mayor	31,535
North Pole	Home Rule City, Incorporated 1953	Strong Mayor	2,208
Badger	Unincorporated (CDP)	N/A	19,031
Chena Ridge	Unincorporated (CDP)	N/A	6,015
College	Unincorporated (CDP)	N/A	11,686
Eielson AFB	Unincorporated (CDP)	N/A	3,559
Ester	Unincorporated (CDP)	N/A	2,422
Farmers Loop	Unincorporated (CDP)	N/A	4,704
Fox	Unincorporated (CDP)	N/A	441
Goldstream	Unincorporated (CDP)	N/A	3,299
Harding-Birch Lakes	Unincorporated (CDP)	N/A	264
Moose Creek	Unincorporated (CDP)	N/A	441
Pleasant Valley	Unincorporated (CDP)	N/A	484
Salcha	Unincorporated (CDP)	N/A	965
South Van Horn	Unincorporated	N/A	572
Steele Creek	Unincorporated (CDP)	N/A	6,437
Two Rivers	Unincorporated (CDP)	N/A	608

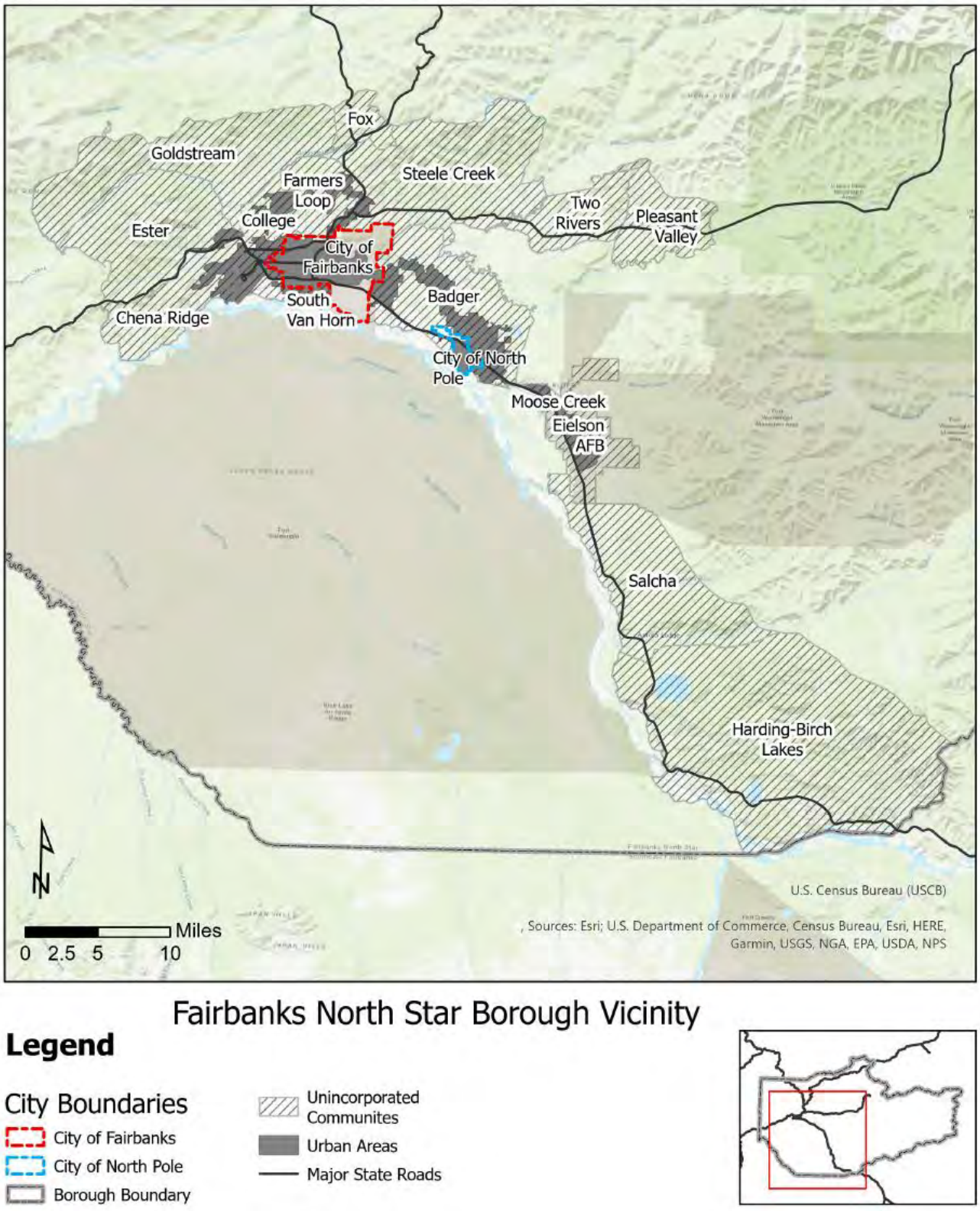
Table 3-1 Note: Population figures are based primarily on the U.S. Census Bureau 2020 Decennial Census for incorporated cities and Census-Designated Places (CDPs). For smaller or non-CDP communities, Alaska Department of Labor and Workforce Development (ADOLWD) population estimates and American Community Survey (ACS) data were used where applicable.

[12] U.S. Census Bureau, 2020 Census – City and CDP populations: https://www.census.gov

Alaska Department of Labor and Workforce Development (ADOLWD), Research and Analysis Section; Alaska Population Estimates by Place: https://live.laborstats.alaska.gov/pop/estimates/data/TotalPopulationPlace.xlsx

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Figure 3-1: Map of FNSB Vicinity



Source: Fairbanks North Star Borough Emergency Management Specialist (ESRI & Census Bureau) 2026

3.1 History

In 1901, Captain E.T. Barnette established a trading post on the Chena River when he was stranded on his way to the gold fields discovered in Tanacross. This trading post, initially home to a modest 5,600 individuals, grew into the modern-day City of Fairbanks. At the time, the population was primarily Alaska Native, but the 1902 gold discovery, just 16 miles north of the post, brought an influx of settlers from the United States, Canada, and Europe. By 1903, Fairbanks had become well established as a gold-mining town, and by the end of the year, the City of Fairbanks had been incorporated. The gold discovery swelled the population to 13,064 by 1910. By World War I, much of the easy-to-reach gold had been extracted, leading to economic and population decline in Fairbanks.

Early transportation of goods and supplies into and out of the settlement relied on sternwheeler river boats. The completion of the Alaska Railroad in 1923 significantly reduced river shipping and hastened the development of Fairbanks by enabling more efficient delivery of goods and supplies. World affairs in Europe and Russia, combined with the new accessibility of the Fairbanks area, led to the establishment of the U.S. Army Garrison Fort Wainwright (originally the Ladd Army Airfield) in 1939 and Eielson Air Force Base (Eielson AFB) (originally the Mile 26 satellite airfield) in 1943, triggering new economic development and population growth. In 1944, the area between Fort Wainwright and Eielson AFB was homesteaded by Bon V. and Bernice Davis, and shortly thereafter, the Alaska Railroad built the Davis Siding along its spur line to Eielson at the homestead. In 1952, Dahl and Gaske Development Company purchased the Davis homestead, subdivided it, and renamed it North Pole in the hope of attracting a toy manufacturer to the area. The City of North Pole was incorporated on January 15, 1953, from portions of the original Davis homestead and an adjacent homestead owned by James Ford.

After President Dwight D. Eisenhower signed the State of Alaska into the United States in 1959, the Alaska Legislature passed the Mandatory Borough Act of 1963, requiring the state's most populous areas to form organized boroughs. This Act established the FNSB in 1964 and seated the Assembly in the City of Fairbanks. Statehood, an improved transportation system between Anchorage and Fairbanks, and the preservation of Denali National Park contributed to economic diversification and revitalization during the 1960s. The 1968 discovery of oil on Alaska's North Slope was another economic boom to the area as construction of the Trans-Alaska Pipeline began in 1974. When completed, the 800-mile pipeline transported crude oil from Prudhoe Bay on the northern shore of Alaska through the greater Fairbanks area before terminating at the port of Valdez for worldwide shipment via ocean-going oil tankers. After the pipeline's completion, the population abruptly declined within the Borough. Over the next 45 years, slow but steady population growth has

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contributed to a diverse and stable economy serving approximately 97,000 people living in the Borough today.

The FNSB was established as a second-class borough on January 1, 1964, by the State of Alaska Mandatory Borough Act of 1963. The Borough is a unit of local government analogous to a county with school district powers. Its charter provided for the mandatory powers of property assessment and taxation, administration of public schools, and planning and zoning. Additional powers have been assumed by the voters or added by Alaska Statutes, including platting, parks and recreation, administration of a public library, operation of public transportation, operation of limited health and social services, animal control, emergency communication services (enhanced 911), solid waste disposal, flood control, air pollution control, and tourism and marketing funded by hotel-motel room taxes.

The Borough has a nine-member Assembly and a directly elected mayor who serves as the Chief Administrative Officer for a three-year term. The mayor can introduce legislation, has veto power, and manages the Borough's day-to-day operations. In addition to overseeing Borough administration, the mayor oversees the FNSB budget and capital improvements. The Assembly members are elected at large, on a nonpartisan basis, for overlapping three-year terms. The Assembly approves the budget, sets the mill rate for taxation, and appropriates funds to provide for Borough services, among other tasks.

A representative from the City of Fairbanks, the City of North Pole, and the School Board is selected in accordance with specific policies and serves a term set by the respective city or school board. The representatives serve as delegates between their respective bodies and the Borough Assembly, providing information about significant issues and activities. A delegate may participate in all deliberations on matters before the Assembly; however, they are not permitted to vote once a matter has been brought into question. The presiding officer may seat a city or school board delegate on any assembly committee.

Non-areawide powers are exercised in the geographic area of the Borough, excluding the incorporated areas of Fairbanks and North Pole. Those powers are emergency disasters, emergency medical services, solid waste collection, and economic development. In addition, the Borough is responsible for more than 100 active service areas. Service areas are smaller jurisdictions within the FNSB that provide specific services such as road maintenance, fire protection, water and sewer, or streetlights. The Borough mayor appoints volunteer commissioners, who are confirmed by the Borough Assembly, to oversee the affairs of each service area.

Taxes levied on an areawide basis may only be expended on area-wide functions. Likewise, taxes levied on a non-areawide basis or within a service area may only be expended on the

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geographic area that was taxed. However, in accordance with a statutory exception, the Borough expends some areawide taxes on economic development (a non-areawide power) in conformity with an agreement between the Borough and the Cities of Fairbanks and North Pole[13].

The City of Fairbanks was incorporated on November 10, 1903, and the City of North Pole was incorporated on January 16, 1953. Both of their charters provide for a Council-Mayor form of government with City Councils, each comprised of the mayor and six elected Council members, to enact laws, ordinances, resolutions, and administrative orders.

3.2 Alaska Native Corporations

Alaska Native Corporations (ANCs) were created under the Alaska Native Claims Settlement Act (ANCSA) of 1971 to resolve long-standing aboriginal land claims in Alaska and to stimulate economic development throughout the state. ANCSA established 12 land-owning regional for-profit corporations and approximately 200 village corporations statewide, later supplemented by a thirteenth regional corporation for Alaska Natives who were not originally enrolled. Together, these corporations serve their shareholders through dividends, workforce training, employment opportunities, charitable contributions, and social and cultural leadership.[14] Within the FNSB, there is one regional ANCSA corporation and multiple village corporations representing Interior Alaska communities.

Doyon, Limited is the Interior Alaska regional ANCSA corporation, headquartered in Fairbanks. It is the largest private landowner in Alaska, managing approximately 12.5 million acres, and represents more than 20,000 shareholders. Doyon focuses on responsible natural resource development and long-term economic sustainability while supporting traditional land use and cultural values. The corporation operates a diverse portfolio of Alaska-based businesses across sectors, including oil and gas services, natural resource development, government contracting, and tourism. [15]

The Tanana Chiefs Conference (TCC) is a regional Alaska Native non-profit corporation, representing tribes across Interior Alaska. Known in the Lower Tanana language as

[13] Financial Services Dept. 2011

[14] Alaska Native Claims Settlement Act (ANCSA), Pub. L. 92-203 (1971); ANCSA Regional Association: https://ancsaregional.com/about-ancsa/

U.S. Department of the Interior, Alaska Native Claims Settlement Act overview: https://www.govinfo.gov/content/pkg/COMPS-10354/pdf/COMPS-10354.pdf

[15] Doyon, Limited – Lands and Corporate Profile: https://www.doyon.com/lands/

First Alaskans Magazine, *Doyon, Limited Corporate Profile*: https://magazine.firstalaskans.org/spotlight/doyon-limited/

Denakkanaaga ("Our Land Speaks"), TCC supports Tribal self-determination and the enhancement of regional unity. The TCC region includes 42 federally recognized tribes spanning approximately 235,000 square miles, or about 37 percent of Alaska's land area. TCC provides a wide range of programs and services, including healthcare, social services, tribal governance support, natural resource management, public safety, community planning, and transportation, all of which contribute to the resilience of Interior Alaska communities.[16]

Alaska Native corporations and tribal organizations play a critical role in land stewardship, economic development, and community resilience across Interior Alaska and are important planning partners in hazard mitigation efforts.

Key organizational contacts for major institutions and entities within the Borough are provided in Table 3-2 and represent important partners in hazard mitigation, emergency response, and community resilience efforts.

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[16] Tanana Chiefs Conference – About Us and Regional Overview: https://www.tananachiefs.org/about/

Tanana Chiefs Conference – Communities and Region Map: https://www.tananachiefs.org/about/communities/

Table 3-2: Community Administration Contacts

FNSB	City of Fairbanks
Grier Hopkins, Mayor 907 Terminal Street PO Box 71267 Fairbanks, AK 99707 Phone: (907) 459-1300 Fax: (907) 459-1102 (Mayor's Office) Email: mayor@fnsb.gov Web: https://www.fnsb.gov	Mindy O'Neall, Mayor 800 Cushman Street Fairbanks, AK 99701 Phone: (907) 459-6715 Fax: (907) 459-6787 Email: mayor@fairbanks.gov Web: https://www.fairbanks.gov
City of North Pole	**FNSB School District**
Larry Terch III, Mayor 125 Snowman Lane North Pole, AK 99705 Phone: 907-488-2281 Fax: 907-488-3002 Email: mayor@northpolealaska.org Web: https://www.northpolealaska.com	Dr. Luke Meinert, Superintendent 520 Fifth Avenue Fairbanks, AK 99701 Phone: 907-452-2000 Fax: 907-451-0541 (District Main) Email: superintendent@K12northstar.org Web: https://www.k12northstar.org
Doyon, Limited	**Tanana Chiefs Conference**
Dan Winkelman, President and CEO 1 Doyon Place, Suite 300 Fairbanks, AK 99701 Phone: 907-459-2000 Fax: 907-459-2060 Email: info@doyon.com Web: https://www.doyon.com	Sharon Hildebrand, Chief/Chairman 122 1st Avenue Fairbanks, AK 99701 Phone: 907-452-8251 Fax: 907-459-3850 (Administration) Email: info@tananachiefs.org Web: https://www.tananachiefs.org
Fairbanks Native Association	
Sharon McConnell, Board President 605 Hughes Avenue, Suite 100 Fairbanks, Alaska 99701 (907) 452-1648 Web: https://www.fairbanksnative.org	

Table 3-2 Note: Contacts listed reflect elected officials or executive leadership at the time of plan development and are subject to change.[17]

[17] Fairbanks North Star Borough, Mayor's Office – Grier Hopkins, official contact information and directory. https://www.fnsb.gov/directory.aspx?eid=199

3.3 Socioeconomics and Development Trends

The FNSB is the third-largest population center in the State of Alaska, with an estimated population of 97,083 residents (approximately 13.1 percent of the total state population) according to 2025 population estimates from the Alaska Department of Labor and Workforce Development (ADOLWD), Research and Analysis Section. Population trends in the Borough have historically followed the growth and decline of the regional economy. While the construction of the Trans-Alaska Pipeline in the 1970s led to a period of rapid population growth, more recent decades have been characterized by slower and more stable changes. Between 2020 Census and 2025 ADOLWD estimate, the Borough's population increased modestly from 95,655 to 97,083 residents, representing approximately 1.5 percent growth. Although overall population growth has remained relatively stable, recent estimates indicate a gradual shift in where residents live within the Borough. Some suburban and outlying areas, including Badger, College, and Eielson AFB, have experienced modest population increases, while the City of Fairbanks has seen a slight population decline since 2021. These patterns suggest continued residential development outside the historic urban core, influenced by regional economic conditions, military presence, employment opportunities, and broader migration trends within Interior Alaska. The median age of a Borough resident is 33 years, and approximately 53 percent of the population is male, according to population estimates from the ADOLWD, Research and Analysis Section. Recent population estimates also indicate a gradual aging of the Borough's population, with noticeable increases in residents over the age of 70 between 2020 and 2025. At the same time, the largest age cohorts remain concentrated between ages 20 and 34, reflecting the influence of the UAF, military personnel, and the regional workforce on the Borough's demographic structure. Key

City of Fairbanks, Mayor's Office – Mindy O'Neall, official contact information. https://www.fairbanks.gov/directory

City of North Pole, Mayor's Office – Larry Terch III, official contact information.
https://www.northpolealaska.com/government/mayor.php

Fairbanks North Star Borough School District, Office of the Superintendent – Dr. Luke Meinert.
https://www.k12northstar.org/about/superintendent/about-dr-meinert
https://education.alaska.gov/DOE_Rolodex/SchoolCalendar/District/16

Doyon, Limited, Corporate Contact and Leadership Information. https://www.doyon.com/contact/
https://magazine.firstalaskans.org/spotlight/doyon-limited/

Tanana Chiefs Conference, Executive Leadership and Contact Information – Chief/Chairman Brian Ridley.
https://www.tananachiefs.org/about/our-leadership/executive-board/brian-ridley/
https://www.tananachiefs.org/about/

Fairbanks Native Association, Board of Directors and Organizational Information – Sharon McConnell, Board President.
https://www.fairbanksnative.org/senior-management/

demographic, economic, and development characteristics described in this section provide context for the vulnerability assessment presented in Chapter 4.

3.3.1 Housing Development Trends

The Borough's housing stock consists of approximately 42,723 housing units, of which 36,359 are occupied households and about 6,364 are vacant or seasonal units. The average household size is approximately 2.51 persons, according to U.S. Census Bureau estimates. In recent years, the City of North Pole and surrounding areas have experienced increased construction of both single-family and multi-family housing, associated in part with housing demand related to an increasing active-duty military population at Fort Wainwright and Eielson AFB.

Recent residential construction trends are summarized in Tables 3-3 through 3-5 and illustrate continued growth primarily in areas outside the incorporated cities. As shown in Table 3-3, single-family housing development is consistently concentrated in the Balance of Borough, accounting for the vast majority of annual construction (ranging from approximately 84 to 93 percent of total single-family units between 2021 and 2024). This pattern reflects ongoing residential expansion into suburban and rural areas, increasing the geographic distribution of housing across the Borough.

Table 3-3: Single-Family FNSB New Housing Units 2021–2024

Location	2021	2022	2023	2024
Fairbanks	11	8	5	10
North Pole	19	13	12	6
Balance of Borough	164	183	214	167
Total	194	204	231	183

Source: Alaska Department of Labor & Workforce Development (ADOLWD), Research and Analysis Section, Alaska New Housing Units – Single-Family Completions by Place, 2021–2024. Retrieved March 11, 2026, from https://live.laborstats.alaska.gov/housing/newh.cfm.

Multi-family construction trends, summarized in Table 3-4, show greater variability across jurisdictions and years. Periods of increased development in Fairbanks (notably 2022–2023) and North Pole reflect localized growth pressures and housing demand, while continued development in the Balance of Borough indicates diversification of housing types beyond the urban core.

Table 3-4: Multi-Family FNSB New Housing Units 2021–2024

Location	2021	2022	2023	2024
Fairbanks	3	32	72	12
North Pole	32	42	12	10
Balance of Borough	25	46	56	46
Total	60	120	140	68

Source: Alaska Department of Labor & Workforce Development (ADOLWD), Research and Analysis Section, Alaska New Housing Units – Multi-Family Completions by Place, 2021–2024. Retrieved March 11, 2026, from https://live.laborstats.alaska.gov/housing/newh.cfm.

Overall housing development trends, presented in Table 3-5, indicate fluctuations in total annual construction, with a peak in 2023 followed by a decline in 2024. Despite year-to-year variability, the data consistently demonstrate that the majority of new housing development occurs outside incorporated city boundaries, reinforcing a pattern of dispersed residential growth.

Table 3-5: Total FNSB New Housing Units 2021–2024

Location	2021	2022	2023	2024
Fairbanks	14	40	77	22
North Pole	51	55	24	16
Balance of Borough	189	229	270	213
Total	254	324	371	251

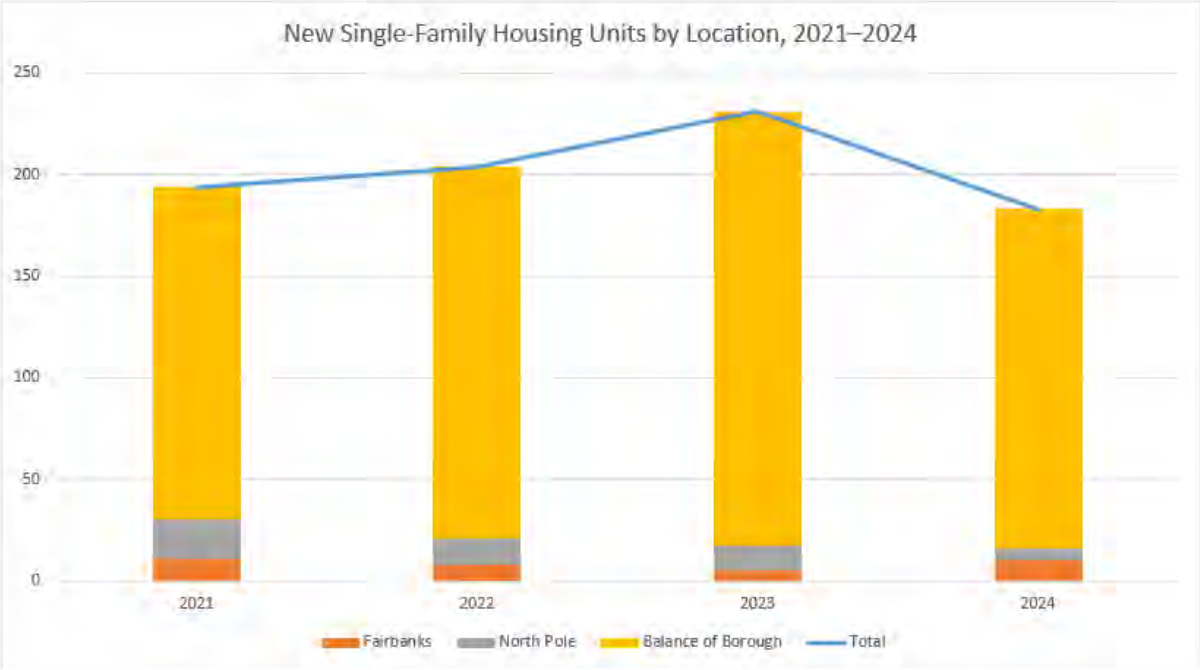
Source: Alaska Department of Labor & Workforce Development (ADOLWD), Research and Analysis Section, Alaska New Housing Units – Total Completed Housing Units (Single-Family and Multi-Family) by Place, 2021–2024. Retrieved March 11, 2026, from https://live.laborstats.alaska.gov/housing/newh.cfm.

This development pattern has important implications for hazard mitigation and emergency management. Expansion into outlying areas increases exposure to hazards such as wildfire, flooding, and limited emergency access, and may place additional demands on infrastructure, transportation networks, and emergency response capabilities.

Figures 3-2 through 3-4 visually illustrate these trends and reinforce the distribution and variability of housing development over time across jurisdictions.

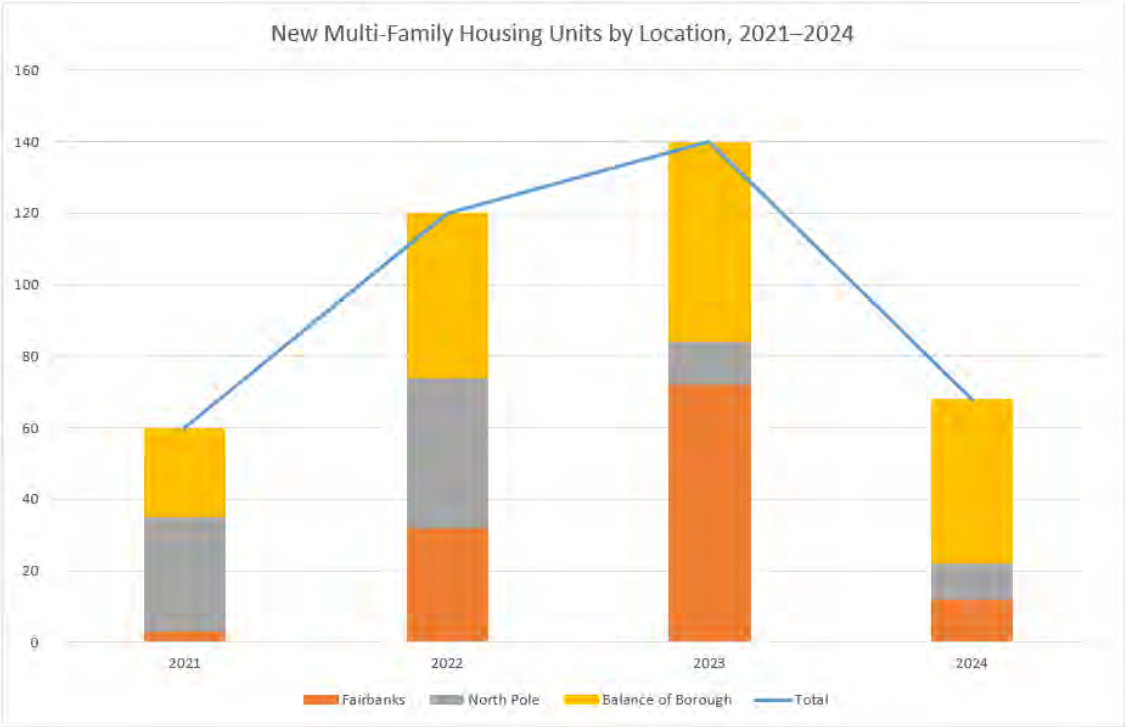
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Figure 3-2: Single-Family FNSB New Housing Units 2021–2024



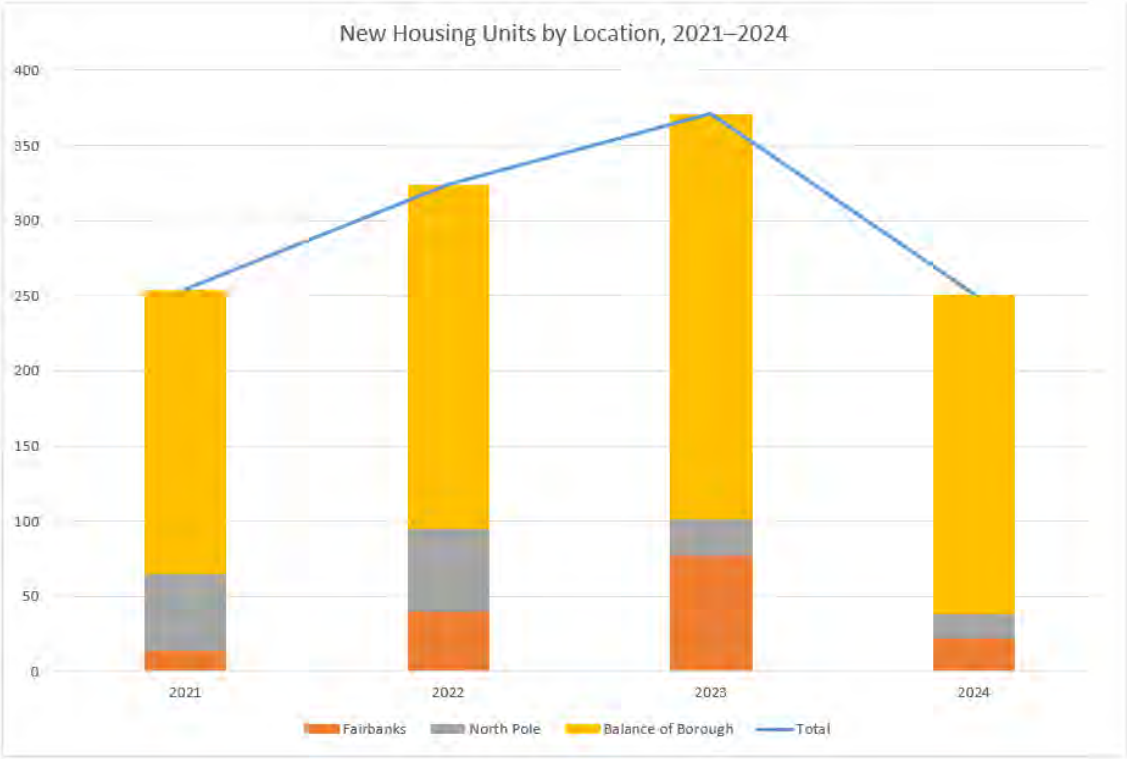
Source: https://live.laborstats.alaska.gov/housing/newh.cfm, Retrieved 8/31/2020

Figure 3-3: Multi-Family FNSB New Housing Units 2021–2024



Source: https://live.laborstats.alaska.gov/housing/newh.cfm, Retrieved 3/11/2026

Figure 3-4: Total Family FNSB New Housing Units 2021–2024



Source: https://live.laborstats.alaska.gov/housing/newh.cfm, Retrieved 3/11/2026

3.3.2 Economy

The FNSB serves as the primary economic center for Interior Alaska and functions as a regional service hub for communities across northern Alaska, including areas connected to North Slope energy development and the Dalton Highway corridor. The Borough's economy is supported by a diverse mix of government, military, education, health care, transportation, retail trade, and resource development activities. Major institutional employers include the FNSB, Fort Wainwright, Eielson AFB, UAF, and regional health care providers.

According to the U.S. Census Bureau County Business Patterns, the Borough supported approximately 26,009 private-sector jobs across 2,576 employer establishments in 2023, with a total annual payroll of approximately $1.7 billion. The civilian labor force participation rate is estimated at 57 percent of the population age 16 years and older. In addition to employer-based jobs, the Borough also contains more than 6,800 nonemployer businesses, reflecting a significant presence of small businesses and independent contractors within the local economy[18].

[18] Alaska Department of Labor and Workforce Development, Research and Analysis Section.

Retail trade and service industries play an important role in the regional economy. Retail sales within the Borough totaled approximately $2.1 billion in 2022, reflecting the community's role as the primary commercial and distribution center for Interior Alaska. Transportation and warehousing activities further support regional supply chains serving rural communities, military installations, and resource development projects.[19]

These economic characteristics influence community resilience, local capacity, and the feasibility of implementing mitigation strategies and actions, as further described in Chapters 10 and 11.

3.3.3 Military

The U.S. military has operated Fort Wainwright Army Post and Eielson AFB since the 1940s, beginning with World War II cold-weather testing and strategic defense missions.[20] Fort Wainwright borders the City of Fairbanks to the east and currently serves as the home to the 1st Infantry Brigade Combat Team, 11th Airborne Division (Arctic), along with multiple support units, reserve components, and tenant organizations, including the Bureau of Land Management (BLM) and the Alaska Fire Service.[21]

Eielson AFB, located approximately ten miles southeast of the City of North Pole, is home to the 354th Fighter Wing and hosts the 18th Aggressor Squadron, 353rd Combat Training Squadron, and the 168th Air Refueling Wing of the Alaska Air National Guard.[22] Together, these installations provide mission support, joint operations training, Arctic operations training, and cold-weather testing for U.S. Army and Air Force missions in Alaska and abroad, primarily within the Joint Pacific Alaska Range Complex (JPARC).[23]

A significant increase in military operations began in 2020 with the beddown of two squadrons of F-35A Lightning II aircraft at Eielson AFB.[24] The expansion brought an estimated 3,000 to 3,300 additional military personnel, contractors, and family members to the region, many of whom reside in the City of North Pole and surrounding rural areas

[19] U.S. Census Bureau, QuickFacts: Fairbanks North Star Borough, Alaska.

[20] U.S. Army Alaska. *History of Fort Wainwright (formerly Ladd Field)*; U.S. Air Force, *Eielson AFB History*.

[21] U.S. Army Garrison Alaska, Fort Wainwright official installation overview and tenant organization listings.

[22] U.S. Air Force, *Eielson Air Force Base Fact Sheets*; Alaska Air National Guard unit descriptions.

[23] Joint Pacific Alaska Range Complex (JPARC), U.S. Department of Defense training overview and FAQs.

[24] U.S. Air Force, *Eielson AFB F-35A Beddown Completion Announcements*, 2020–2022.

between North Pole and Eielson AFB, contributing to local housing demand and population growth.[25]

Fort Wainwright manages approximately 1.5 to 1.6 million acres of training land, supporting a wide range of maneuver, aviation, live-fire, and Arctic training activities across Interior Alaska.[26] Eielson AFB operates within the JPARC, a training area encompassing approximately 67,000 square miles of airspace, recognized as the largest fully instrumented air combat training range in the world.[27]

The economic impact of these two installations on the FNSB and the State of Alaska is substantial. According to the Fairbanks Economic Development Corporation, Fort Wainwright generated approximately $1.1 billion in direct economic activity to the Borough in 2024, while Eielson AFB contributed approximately $765.5 million.[28] Together, these installations support more than 30,000 military personnel, family members, civilian employees, contractors, and retirees, representing a significant share of the Borough's population and economic base.[29]

The presence of major military installations contributes to population distribution, infrastructure demand, and economic stability, all of which influence vulnerability and risk as evaluated in Chapter 4.

3.3.4 K-12 Education

The FNSB School District (FNSBSD) operates 33 public schools, serving students in grades PK-12, with a total district enrollment of approximately 11,200-11,900 students in the 2024-2025 school year.[30] The district's schools include a mix of elementary, middle, and high schools, as well as alternative and school-of-choice programs, including magnet and correspondence-based options.[31]

In addition to public schools, approximately seven private elementary and secondary schools operate within the Borough, supplementing district offerings. A variety of homeschool,

[25] Fairbanks North Star Borough Community Planning; Alaska Department of Labor & Workforce Development (ADOLWD), population and housing impact analyses related to the F-35 beddown.

[26] U.S. Army Garrison Alaska, *Fort Wainwright Natural Resources and Training Lands Overview*.

[27] U.S. Department of Defense; JPARC official publications describing range size and capabilities.

[28] Fairbanks Economic Development Corporation (FEDC), *Annual Economic Analysis*, 2024.

[29] Alaska Department of Labor & Workforce Development; FEDC regional demographic and economic summaries.

[30] National Center for Education Statistics (NCES). *Fairbanks North Star Borough School District Profile, 2024–2025*.

[31] Fairbanks North Star Borough School District (FNSBSD). *District Facts and School Programs.*

correspondence, and distance-learning programs are also available to families, reflecting both geographic distance and parental choice within Interior Alaska.[32]

Over the past decade, the district has experienced a sustained decline in enrollment, mirroring broader demographic trends in the Borough, including population stagnation, declining birth rates, and an aging population. District enrollment decreased from approximately 14,700 students in the early 2010s to about 11,200 students by the mid-2020s, a reduction of roughly 24 percent.[33]

In response to continued declines in enrollment and associated fiscal constraints, the School Board approved a school consolidation plan in February 2025, resulting in the closure of Pearl Creek Elementary School, Midnight Sun Elementary School, and Two Rivers School at the conclusion of the 2024–2025 school year[34].

Because of its concentration of educational infrastructure, training programs, and support services, Fairbanks functions as a regional education hub for Interior Alaska, serving students not only from the Borough but also from surrounding communities, military installations, rural areas, and remote villages throughout the region[35].

Educational facilities represent critical infrastructure and are included in the risk assessment of critical facilities and services in Chapter 4.

3.3.5 Post-Secondary and Research Institutions

The UAF was founded in 1917 as the Alaska Agricultural College and School of Mines and serves as the state's primary research university.[36] Today UAF hosts seven major research units, including the Agricultural and Forestry Experiment Station; Arctic Region Supercomputing Center (ARSC); Geophysical Institute; Institute of Marine Science; Institute of Arctic Biology; Institute of Northern Engineering; and International Arctic Research Center (IARC).[37]

[32] Alaska Department of Education & Early Development (DEED). *Private, Homeschool, and Correspondence School Listings.*

[33] Fairbanks North Star Borough School District; Alaska Public Media (KUAC). *Historical Enrollment Trends and Reporting.*

[34] Fairbanks North Star Borough School District. *School Consolidation Plan and Board Actions, February 2025.*

[35] Alaska Department of Labor & Workforce Development; Interior Alaska education services context.

[36] University of Alaska Fairbanks. *Institutional History.*

[37] University of Alaska Fairbanks. *Research Units and Centers.*

UAF is a federally designated Land-Grant, Sea-Grant, and Space-Grant Institution, and operates the Poker Flat Research Range, located north of Fairbanks. Poker Flat is the only university-owned scientific rocket launching facility in the United States and the world's largest land-based high-latitude sounding rocket range.[38]

Additional major educational and cultural assets located on the UAF campus include the Alaska Native Language Center and the University of Alaska Museum of the North, both of which serve statewide roles in research, preservation, and public education.[39]

These institutions contribute to regional capacity for hazard research, data analysis, and mitigation planning, supporting ongoing risk assessment and resilience efforts.

3.3.6 Research and Development

The research in energy, engineering, climate change, and biomedicine conducted at UAF is of great importance to the FNSB and the State of Alaska. UAF serves as the state's primary research university, with extensive research across science and engineering disciplines and a broad Arctic research mission.[40]

These research areas, combined with UAF's traditional strengths in geophysics, oceans and fisheries sciences, and natural hazards, contribute to its national research profile. Recent Forbes listings place UAF at approximately #346 overall, #217 in research universities, and #82 in the West region.[41]

UAF receives substantial research funding. Recent University data indicated approximately $200-246 million annually in research expenditures.[42]

The revenue generated by research at UAF supports employment, regional economic activity, and workforce development, and contributes significantly to the local and statewide economy through research spending, grants, and associated jobs.[43]

In 2010, UAF revitalized the Office of Intellectual Property and Commercialization (OIPC) to protect and promote university research and technologies. OIPC supports technology transfer, working with researchers and industry partners, licensing, and commercializing

[38] Poker Flat Research Range (UAF). *Facility Overview.*

[39] University of Alaska Fairbanks. *Campus Cultural and Research Institutions.*

[40] University of Alaska Fairbanks. *UAF Research Overview and Expenditures.*

[41] Forbes. *University of Alaska Fairbanks Rankings.*

[42] University of Alaska Fairbanks. *UAF Research Overview and Expenditures.*

[43] University of Alaska Fairbanks. *UAF Research Overview and Expenditures.*

innovations, helping move research discoveries into practical applications with societal and economic benefits.[44]

The Cold Climate Housing Research Center (CCHRC) is a nonprofit organization located in Fairbanks that researches and develops energy-efficient, durable, and healthy building technologies for cold regions. The center was established in 1999 by the Alaska State Home Builders Association to address the challenges of construction in Alaska's extreme environments.[45] The CCHRC research facility, located on the UAF campus, was completed in September 2006 and serves as a testing and demonstration site (four-home Sustainable Village) for cold-climate building systems, including applied research and training programs.[46] The ARSC operated on the UAF campus as a high-performance computing facility supporting research across Alaska and the Arctic. ARSC provided advanced computational capabilities for modeling and analysis, including applications such as climate modeling, sea ice analysis, volcanic ash tracking, and tsunami forecasting.[6] However, it should be noted that ARSC ceased major operations after 2015, following the loss of Department of Defense (DOD) funding, and should be described as a former or legacy research center, not a currently active "top-level" facility.[47]

3.3.7 Agriculture

In the last decade, the Tanana Valley has been one of Alaska's most productive agricultural regions, particularly for crop production in Interior Alaska. The region supports a variety of agricultural activities made possible by long summer daylight hours and favorable soil, and it has long served as a center for agricultural research and development in the state.[48]

Common crops grown in the region include grass, hay, barley, oats, potatoes, and vegetables such as lettuce, carrots, cabbage, along with other cold-tolerant crops adapted to Interior Alaska conditions.[49] Livestock production includes beef, pork, sheep, dairy products, and

[44] University of Alaska Fairbanks. *Office of Intellectual Property and Commercialization*.

[45] Cold Climate Housing Research Center. *Mission and History*.

[46] University of Alaska Fairbanks. *CCHRC Facility Description*.

[47] Arctic Region Supercomputing Center. *Program Description and Operations*.

[48] UAF Cooperative Extension / Alaska agricultural research and Interior Alaska crop production descriptions; Tanana Valley agricultural activity and crop types.

[49] UAF Cooperative Extension / Alaska agricultural research and Interior Alaska crop production descriptions; Tanana Valley agricultural activity and crop types.

wool, and greenhouse operations produce vegetables and ornamental plants throughout the year, helping extend the short growing season[50].

Despite local agricultural production, the majority of Alaska's food supply is imported. Approximately 95 percent of food purchased in Alaska originates from outside the state, making the state's food system highly dependent on marine and surface transportation networks and vulnerable to supply chain disruptions[51].

The dependence on imported food supplies highlights vulnerability to supply chain disruptions and infrastructure interruptions, which are considered in broader resilience planning efforts.

3.3.8 Forestry

The Tanana Valley State Forest covers approximately 1.8 million acres and is the largest state forest in Alaska, extending across much of the Tanana River basin in Interior Alaska.[52] A substantial portion of the forest lies with the FNSB.

The Borough represents an important local market for wood products, although most forest-product activity in the region occurs on a small scale. Local mills primarily produce rough lumber and specialty wood products, including house logs, paneling, and flooring.[53]

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[50] UAF Cooperative Extension / Alaska agricultural research and Interior Alaska crop production descriptions; Tanana Valley agricultural activity and crop types.

[51] U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). "Partnerships Build Healthy Soil and Food Security in Fairbanks, Alaska." January 30, 2026 and *Alaska Food Supply and Production* (2025). Alaska Supply Chain Analysis (GeoSummit / FEMA-related research).

[52] Alaska Department of Natural Resources, Division of Forestry & Fire Protection. *Tanana Valley State Forest Management Plan (2025 Revision).* Alaska Department of Natural Resources / Division of Forestry. *Alaska State Forests Overview.*

[53] Alaska Department of Natural Resources, Division of Forestry & Fire Protection. *Tanana Valley State Forest Management Plan (2025 Revision).*

Figure 3-5: Map of Tanana Valley Forest

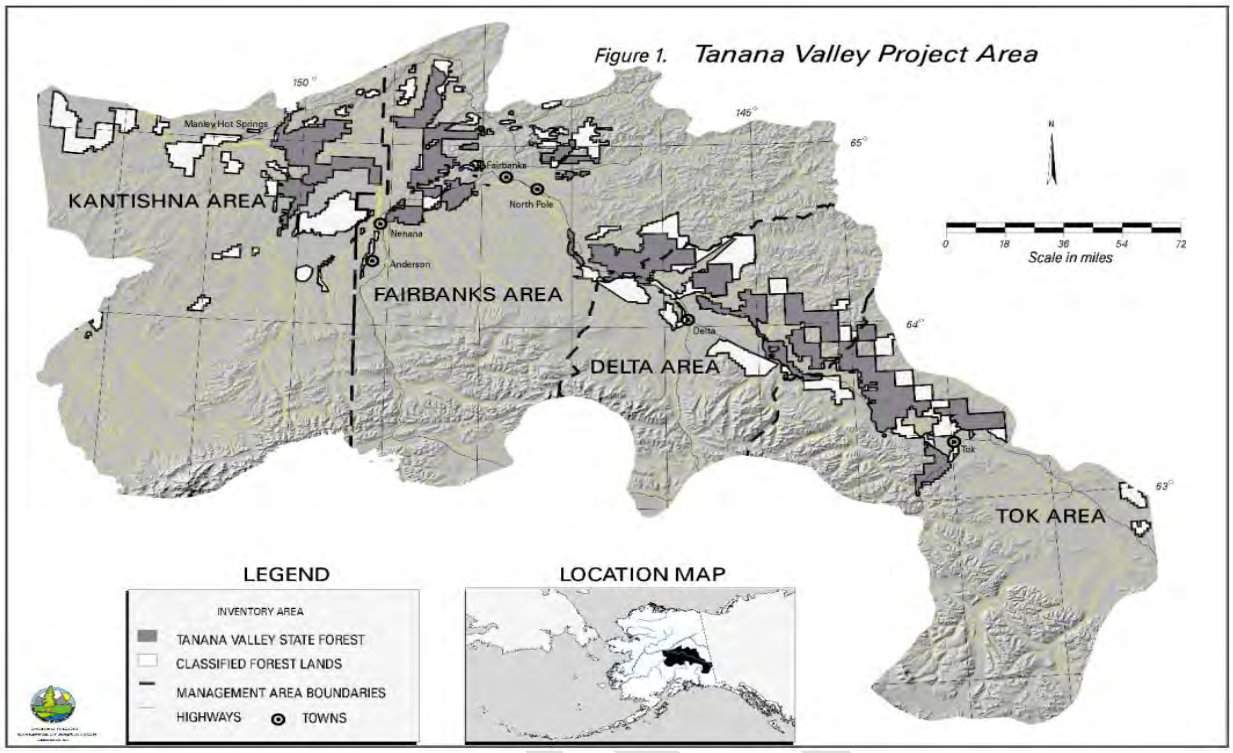


Figure 3-5 illustrates the extent of the Tanana Valley State Forest, demonstrating the proximity of forested areas to developed communities and the associated wildfire risk context.

High heating costs in Interior Alaska contribute to a significant demand for firewood. Commercial and personal use permits for timber and firewood harvesting are available through the Alaska Division of Forestry and Fire Protection (DFFP), and the FNSB also issues permits for firewood cutting on Borough lands.[54]

3.3.9 Mining

The FNSB serves as a staging and service hub for mineral exploration and development in Interior Alaska. Major mining operations, including Fort Knox, Pogo, and Usibelli Coal Mine (UCM), are located within a reasonable logistical distance of Fairbanks (generally within

[54] Alaska Department of Natural Resources, Division of Forestry & Fire Protection. *Tanana Valley State Forest Management Plan (2025 Revision).*

approximately 25 to 220 miles), and their proximity supports the Borough's role as a center for labor, equipment, and support services.[55]

Infrastructure improvements, including road and air access, enhance the productivity and viability of these operations and increase access to more remote mineral resources across Interior Alaska. The relationship between infrastructure and mining development is well established in Alaska's resource economy.[56]

In 1997, Alaskan gold production from hard rock (lode) mines surpassed placer production for the first time in decades, reflecting a shift toward large-scale industrial mining. The Fort Knox Gold Mine, located approximately 25 miles northeast of Fairbanks, began production in the mid-1990s and remains one of Alaska's largest gold producers. It was constructed in 1995 and purchased by the Kinross Corporation in 1998.[57] It produces approximately 290,000-450,000 ounces of gold annually in recent years (depending on ore and processing conditions).[58]

Starting in 2023, the Mahn Choh Mine opened in Tetlin, Alaska, as a joint venture (Peak Gold) between Kinross Gold Corporation and Contango, ORE, Inc. Tetlin is located approximately 240 miles southeast of Fairbanks, outside the borough.[59] In conjunction with Black Gold Transport, the ore from this mine is trucked to the mill facility at the Fort Knox Mine. Trucks operate 24/7, hauling approximately 60 round-trip loads per day through the borough. The specialized B-train trucks weigh 82.5 tons per vehicle while the payload weight is about 50 tones. This operation is expected to continue through 2027 or 2028.[60]

Pogo Mine, owned by Sumitomo Metal Mining Co., Ltd., is located approximately 90-140 miles southeast of Fairbanks, began operating in early 2006, and is a major underground gold mine.[61] The current annual production level is approximately 280,000 ounces of gold.[62]

[55] Alaska Department of Natural Resources. *Fort Knox Mine Project Description and Operations.* Northern Star Resources. *Pogo Mine Operations and Production Data.*

[56] Alaska Resource Development Council (RDC). *Alaska Mining Industry Overview.*

[57] Alaska Department of Natural Resources. *Fort Knox Mine Project Description and Operations.*

[58] North of 60 Mining News. *Fort Knox Production Levels and Output Data (2025).*

[59] Alaska Department of Natural Resources. *Mahn Choh Project Description.*

[60] Kinross Mahn Choh. https://manhchoh.com/trucking/

[61] Northern Star Resources. *Pogo Mine Operations and Production Data.*

[62] Northern Star Resources. *Pogo Mine Operations and Production Data.*

The UCM, located in the Denali Borough and headquartered in Fairbanks, has operated since the 1940s and remains Alaska's only operating coal mine.[63] Annual mine production has grown from 10,000 tons in 1943 to an average of approximately 1.2-2 million tons of coal per year.[64] UCM is supported by the most modern mining equipment and state-of-the-art engineering. Today, UCM supplies coal to six Interior Alaska power plants and, over the years, has exported coal to Chile, South Korea, Japan, and several other destinations in the Pacific Rim.[65]

Mining contributes several billion dollars annually to Alaska's economy and represents a significant share of the state's resource-based economic activity.[66] Within the Borough, Federal labor statistics indicate that during the third quarter of 2025, approximately 1,233 to 1,290 employees worked in the Natural Resources and Mining sector within the FNSB across approximately 52 establishments. Workers in this sector earned an average weekly wage of about $1,851 (approximately $8,000 per month), reflecting the relatively high wages typical of resource-extraction industries.[67] Mining activity in Interior Alaska is strongly tied to major gold and coal operations, including Fort Knox, Pogo, and Usibelli, which provide regional employment, contracting, and secondary economic benefits.[68]

Increased global demand for minerals continues to drive exploration and development activity in Alaska, particularly within the Interior Alaska/Fairbanks mineral district, which is recognized for its gold deposits and resource potential.[69] The Fort Knox mine has undergone expansions over time and continues to evolve with new deposits and processing improvements, which have expanded its land holdings by 709 acres in 2018. This expansion, along with changes in extraction technology, is anticipated to potentially extend the life of the mine to 2028.[70]

[63] Alaska Mining and Resource Development Summaries / Industry Reports (Usibelli Coal Mine and Interior mining activity).

[64] Alaska Mining and Resource Development Summaries / Industry Reports (Usibelli Coal Mine and Interior mining activity).

[65] Alaska Mining and Resource Development Summaries / Industry Reports (Usibelli Coal Mine and Interior mining activity).

[66] Alaska Business Magazine. *Mining Industry Economic Contribution in Alaska.*

[67] Alaska Resource Development Council (RDC). *Alaska Mining Industry Overview.*

[68] Lisa Putnam, V.P. Public Relations, Usibelli Coal Mine

[69] Alaska Mining and Resource Development Summaries / Industry Reports (Usibelli Coal Mine and Interior mining activity).

[70] Brenna Schaake, External Affairs Superintendent, Kinross Fort Knox.

3.3.10 Oil and Gas Development

At the forefront of nearly all economic activities in the FNSB is the availability of a reasonably priced energy source. With the continued decline in oil production from the large North Slope fields, there has been sustained interest in developing and marketing Alaska's extensive natural gas reserves.

There are approximately 35 trillion cubic feet (tcf) of proven natural gas reserves in the Prudhoe Bay and Point Thompson area, representing one of the largest conventional gas accumulations in North America.[71] A significant portion of this gas is currently reinjected into oil recovery due to the lack of large-scale transportation infrastructure to deliver it to market.[72]

In addition to known reserves, the federal government estimates that hundreds of trillions of cubic feet of technically recoverable natural gas may exist in Alaska's North Slope region. Estimates of unexplored conventional resources exceed 200 tcf, and even larger quantities may exist in unconventional reservoirs such as shale formations and natural gas hydrates, collectively representing substantial energy potential. [73]

The Trans-Alaska Pipeline System (TAPS) historically supplied crude oil to two refineries in the Fairbanks area: Flint Hills Resources and Petro Star.[74] The Flint Hills refinery in North Pole ceased crude oil processing in 2014 due to economic and environmental factors and now operates as a fuel storage and distribution facility.[75]

The Petro Star refinery, located in North Pole, continues to operate and has a processing capacity of approximately 22,000 barrels per day, producing refined products such as kerosene, diesel, and jet fuel.[76] Petro Star distributes fuel throughout the Interior and Northern Alaska, supplying remote communities, military installations, and major industrial users, including mining operations and oil field support activities.[77]

[71] Alaska Gasline Development Corporation. *Alaska's Natural Gas Supply.* Alaska Department of Natural Resources / Alaska State Legislature. *North Slope Gas Resource Estimates and Assessments.*

[72] Alaska LNG Project / Industry sources. *Prudhoe Bay Gas Reinjection and Production Characteristics.*

[73] Alaska Department of Natural Resources / Alaska State Legislature. *North Slope Gas Resource Estimates and Assessments.*

[74] Trans-Alaska Pipeline System overview and infrastructure context.

[75] Oil & Gas Journal; Center for Land Use Interpretation. *Flint Hills Refinery Closure (2014).*

[76] Petro Star Refinery Capacity Data.

[77] Arctic Slope Regional Corporation. *Petro Star Operations and Distribution.*

3.3.11 Tourism

Fairbanks serves as a gateway for travelers from Asia, Europe, and the continental United States and is an important tourism hub for Interior Alaska. Tourism activity in the region has shown overall stability with periods of strong growth in recent years, particularly in winter visitation and airport traffic.[78]

Borough bed tax revenues have increased significantly in recent years, with reports indicating increases exceeding 20 percent year-over-year in 2024, reflecting recovery and growth in visitor spending.[79] Lodging demand has remained relatively steady, with hotel occupancy generally averaging in the mid- to upper-60 percent range (approximately 67-69 percent) depending on the reporting period.[80] Short-term rental supply has expanded substantially, with listings increasing by 20 percent or more in recent periods, reflecting growth demand and investment in tourism accommodations.[81]

These indicators suggest continued strength and gradual growth in tourism activity within the FNSB, although some datasets indicate variability tied to broader national and international travel trends.[82]

While most visitors arrive during the summer months, Fairbanks has increasingly developed itself as a destination for winter tourism, which has shown particularly strong performance in recent years.[83] Winter tourism in Fairbanks benefits from the proximity of cross-country skiing, snowmobiling, dog mushing, winter festivals, and hot springs, along with specialized visitor experiences centered on Arctic conditions.[84]

The World Ice Art Championships, held annually in late winter, attract artists and visitors from around the world and are recognized as one of the largest ice sculpting events

[78] Alaska Public Media (KUAC). *Fairbanks Tourism Report and Visitor Trends, 2025.* Alaska Business Magazine. *Fairbanks Sees Record Winter Visitation (2023–2024).*

[79] Explore Fairbanks. *Tourism Works for Fairbanks (2024 Q1 Report).* Fairbanks North Star Borough Finance Committee. *Bed Tax Revenue Increase Report, 2025.*

[80] Explore Fairbanks. *Tourism Works for Fairbanks (2024 Q1 Report).* Explore Fairbanks. *Tourism Works Mid-Year Report (2024).*

[81] Alaska Public Media (KUAC). *Fairbanks Tourism Report and Visitor Trends, 2025. Explore Fairbanks. Tourism Works for Fairbanks (2024 Q1 Report).* Fairbanks North Star Borough Economic Development data and local tourism indicators summarized in regional economic reports, 2024.

[82] Alaska Public Media (KUAC). *Fairbanks Tourism Report and Visitor Trends, 2025.*

[83] Alaska Business Magazine. *Fairbanks Sees Record Winter Visitation (2023–2024).*

[84] Explore Fairbanks. *Winter Tourism Activities and Visitor Guide.* [issuu.com]

globally.[85] Additionally, Fairbanks is widely regarded as one of the premier locations in Alaska for viewing the Aurora Borealis (Northern Lights), contributing to increased winter visitation and tourism activity.[86]

3.4 Changes in Development and Effects on Vulnerability (Since 2021 Update)

Since the adoption of the 2021 MJ-HMP, participating jurisdictions have experienced incremental development and redevelopment that are consistent with regional growth patterns within the Borough. Overall, development has been moderate in scale and has generally occurred within or adjacent to previously developed areas, including both incorporated municipalities and unincorporated areas of the Borough.

Fairbanks North Star Borough (FNSB)

Within the unincorporated areas of the FNSB, development since 2021 has primarily consisted of low-density residential construction, infill development, and infrastructure improvements. Much of this development has occurred in areas already subject to hazard exposure, including wildfire-prone wildland-urban interface areas and locations affected by permafrost degradation and ground stability concerns. As a result, overall exposure to hazards such as wildfire, ground failure, and infrastructure vulnerability has remained steady or increased slightly where development has expanded into previously undeveloped or minimally developed areas. The Borough's limited regulatory authority over building codes in unincorporated areas continues to influence vulnerability, with mitigation relying heavily on planning, infrastructure improvements, and voluntary measures.

City of Fairbanks

Development within the City of Fairbanks since 2021 has largely taken the form of infill development, redevelopment, and upgrades to existing infrastructure and public facilities. Because development is concentrated within an already urbanized area with established infrastructure and regulatory controls, including building code enforcement and floodplain management, changes in vulnerability have been relatively minimal. However, redevelopment and continued use of aging infrastructure in areas exposed to flooding, severe weather, and seismic risk pose ongoing vulnerability concerns. Integration of

[85] Explore Fairbanks / Ice Alaska. *World Ice Art Championships Overview.*

[86] Alaska Business Magazine. *Fairbanks Sees Record Winter Visitation (2023–2024). Explore Fairbanks. Winter Tourism Activities and Visitor Guide.*

mitigation into capital projects and building code enforcement helps reduce potential increases in vulnerability associated with redevelopment.

City of North Pole

Development in the City of North Pole since 2021 has been limited and primarily consists of small-scale residential and commercial development, along with infrastructure maintenance and improvements. Similar to Fairbanks, development has generally occurred within existing developed areas where building codes and permitting processes are in place. As a result, vulnerability to hazards such as flooding, severe weather, and seismic events has remained relatively stable. Continued enforcement of building codes and participation in mitigation planning support an incremental reduction of risk over time.

Overall, while no large-scale or rapid development changes have significantly altered the risk landscape since the 2021 plan, incremental development in hazard-prone areas, particularly in the wildland-urban interface and areas affected by permafrost degradation, continues to influence long-term vulnerability. The integration of mitigation actions into planning, infrastructure investments, and regulatory processes remains critical to managing these risks.

These development patterns are reflected in the exposure and vulnerability analysis presented in Chapter 4, which continues to identify wildfire, severe weather, flooding, ground failure, and infrastructure interdependencies as key drivers of risk across all jurisdictions.

3.5 Transportation

The transportation system within the FNSB includes air, rail, and road networks that provide critical connectivity for residents, commerce, emergency response, and access to remote areas. These systems support regional supply chains and are essential for maintaining continuity of operations during and after hazard events. Transportation infrastructure is evaluated as part of the broader infrastructure vulnerability assessment in Chapter 4.

3.5.1 Air Transportation

Air transportation is central to the Alaskan economy due to the state's vast geography and limited reach of road and rail systems, particularly in rural and remote areas. As a result,

aviation plays a significantly more prominent role in Alaska's transportation system than in most other U.S. states.[87]

International and domestic air cargo and passenger service are the primary components of aviation's role in the FNSB economy. Fairbanks International Airport (FIA) serves as a key regional hub for Interior Alaska, supporting passenger travel, freight movement, and access to remote communities. Key operational statistics are summarized in Table 3-6.[88]

Table 3-6: Fairbanks International Airport Statistics (2019–2024)

Calendar Year	Passenger Enplanements	Cargo Weight (lbs)	Landed Throughput (Operations)
2019	583,075	142,726,686	17,170
2020	395,367	131,341,307	20,468
2021	450,694	139,228,499	17,834
2022	513,160	177,386,502	18,502
2023	548,679	138,209,050	17,429
2024*	574,000 (est.)	140,000,000 (est.)	17,500 (est.)

Source: Alaska Department of Transportation & Public Facilities; Fairbanks International Airport statistics; Explore Fairbanks tourism reports. Values for 2024 are estimated based on recent trends.

Table 3-6 demonstrates the scale of passenger traffic, cargo movement, and aircraft operations, illustrating the airport's critical role in regional transportation and supply chains.

Many communities in Interior and Northern Alaska are not accessible by road, and therefore, access to healthcare services, including medical and dental care, as well as mail delivery, food, fuel, and other critical supplies.[89]

From FIA, it is approximately 50 minutes by air to Anchorage, around three to four hours to Seattle, approximately 6.5 to 7.5 hours to Tokyo, around seven to nine hours to New York (with connections), and roughly nine to eleven hours to London, depending on the route and connections.

[87] Alaska Department of Transportation & Public Facilities (DOT&PF); FAA Alaska aviation system analyses; general Alaska transportation system characteristics.

[88] Fairbanks International Airport; Alaska aviation and regional transportation system descriptions.

[89] Alaska Department of Transportation & Public Facilities (DOT&PF); FAA Alaska aviation system analyses; general Alaska transportation system characteristics. Fairbanks International Airport; Alaska aviation and regional transportation system descriptions.

3.5.2 Rail Transportation

The Alaska Railroad Corporation (ARRC) was acquired from the federal government on January 5, 1985, and is currently an independently managed corporation owned by the State of Alaska.[90] The Alaska railroad mainline extends approximately 470 miles from the all-season, deep-water port of Seward to its northern terminus in Fairbanks. From Fairbanks, a branch line extends 28 miles east to North Pole, serving industrial areas including fuel facilities and Eielson AFB.[91]

ARRC provides both passenger and freight service to the FNSB. Passenger service is primarily seasonal (summer) and oriented toward the tourism industry.[92] Freight service plays a critical role in regional supply chains. Coal is transported from the UCM near Healy to power plants in Fairbanks, Fort Wainwright, and Eielson AFB, and petroleum products, including jet fuel, are transported between Interior Alaska and Anchorage.[93]

Phase I of the Northern Rail Extension Project, including construction of a major bridge over the Tanana River near Salcha, was completed in August 2014.[94] This bridge is a key component of a proposed multi-phase extension intended to expand rail service deeper into Interior Alaska. Planned future phases would extend rail service approximately 80 miles southeast toward Delta Junction, subject to funding and project development.[95]

Rail transportation supports regional supply chains and critical infrastructure movement, contributing to overall system resilience.

3.5.3 Road Transportation

All major highways in interior Alaska converge at Fairbanks, making it a central surface transportation hub for the region. The Alaska Highway connects Interior Alaska to Canada and the continental United States, terminating at Delta Junction, where it meets the Richardson Highway, which continues north to Fairbanks. The Richardson Highway,

[90] Alaska Railroad Corporation. *History and System Overview (Federal Transfer and System Description).*

[91] Alaska Railroad Corporation; Alaska Department of Transportation & Public Facilities. *Fairbanks and Eielson Branch Line Information.*

[92] Alaska Railroad Corporation. *Freight and Passenger Services Overview.*

[93] Alaska Railroad Corporation. *Freight and Passenger Services Overview.* Alaska Resource Development Council; Alaska energy and transportation supply chain descriptions.

[94] Alaska Railroad Corporation; Alaska DOT&PF. *Northern Rail Extension Project and Tanana River Bridge (2014).*

[95] Alaska Railroad Corporation; Alaska DOT&PF. *Northern Rail Extension Project and Tanana River Bridge (2014).*

originally developed from a historic trail used during the early gold rush, connects Fairbanks to the port of Valdez.[96]

The George Parks Highway (Parks Highway) extends approximately 300-360 miles south from Fairbanks to Wasilla, where it connects to the regional highway system leading to Anchorage. The highway was constructed in the late 1960s and early 1970s to shorten travel time between Fairbanks and Anchorage and to improve access to Denali National Park.[97]

The Steese Highway extends north from Fairbanks to Circle and the Yukon River, and the Chena Hot Springs Road branches east from this corridor. The Elliott Highway, which intersects the Steese Highway near Fox, extends northwest to Livengood, Minto, and Manley Hot Springs, and connects with the Dalton Highway, which continues north to the North Slope oil fields at Prudhoe Bay.[98] There are several hundred miles of state-maintained highways and roads within the Borough.

As a second-class borough, the FNSB has limited road powers, which may only be exercised within an established Road Service Area (RSA). These RSAs are established by voters. Within these areas, authority generally extends only to the ownership and maintenance of public roads.[99] There are currently over 100 established RSAs within the Borough, responsible for maintaining local roads within their boundaries.

Several other jurisdictions and agencies are responsible for roadway ownership and maintenance within the Borough:

- The Alaska Department of Transportation and Public Facilities (DOT&PF) maintains state highways and other state-owned roads.
- The City of Fairbanks maintains roads within its municipal boundaries.
- The City of North Pole maintains roads within its municipal boundaries.
- The UAF maintains roads located on the university campus.

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[96] Alaska Department of Transportation & Public Facilities (DOT&PF). *Interior Alaska Highway System Descriptions.*

[97] Alaska DOT&PF; Parks Highway history and construction records.

[98] Alaska Department of Transportation & Public Facilities (DOT&PF). *Interior Alaska Highway System Descriptions.*

Alaska DOT&PF; Parks Highway history and construction records.

[99] Alaska Statutes; Fairbanks North Star Borough Public Works / Road Service Area governance documents.

- ★ Roadways located within Fort Wainwright and Eielson AFB are maintained by the U.S. Army and U.S. Air Force, respectively.

In addition to these publicly maintained roads, there are numerous private and subdivision roads within the Borough that are not under a formal public maintenance authority. Road conditions on these roads vary, and some may be seasonally inaccessible.

For planning purposes, roads within the Borough are classified into several functional categories, including arterial, major collector, minor collector, local roads, and alleys. These classifications are used for transportation planning and do not necessarily reflect ownership or maintenance responsibility.

The road network plays a vital role in emergency access, evacuation, and response and is a key component of infrastructure vulnerability analysis in Chapter 4.

3.6 Electric and Utilities

Golden Valley Electric Association (GVEA), incorporated in 1946 in Fairbanks, distributes power to Interior Alaska communities, including Fairbanks, Delta, Nenana, Healy, and Cantwell.[100] GVEA operates an extensive electric system consisting of more than 3,200 miles of transmission and distribution lines and approximately 40 substations, serving tens of thousands of Interior residents.[101]

GVEA generates electricity using a mix of coal, oil, and renewable energy sources, and is interconnected with other Railbelt utilities through the Alaska grid system, including the Anchorage-Fairbanks Intertie.[102] The utility has made significant efforts to diversify its energy portfolio through the development of renewable energy projects.[103]

In 2012, GVEA constructed the Eva Creek Wind Farm, a 24.6-megawatt (MW) facility near Healy, which remains Alaska's largest wind project.[104] The utility operates its renewable energy program (Sustainable Natural Alternative Power (SNAP)), which supports distributed renewable generation from local producers.[105]

[100] Golden Valley Electric Association. *Corporate History and Overview.*

[101] Golden Valley Electric Association. *System Description and Operations.*

[102] Golden Valley Electric Association. *System Description and Operations.*

[103] Golden Valley Electric Association. *Renewable Energy Programs and Initiatives.*

[104] Golden Valley Electric Association. *Renewable Energy Programs and Initiatives.* Alaska Energy Authority / Energy Data. *Eva Creek Wind Farm (24.6 MW).*

[105] Golden Valley Electric Association. *System Description and Operations.*

GVEA also operates one of the largest rechargeable battery energy storage systems (BESS) in the world, capable of providing approximately 27 MW of power for up to 15 minutes, helping stabilize the grid and prevent short-term outages.[106]

The Interior Gas Utility (IGU) was established in 2012 to deliver lower-cost natural gas to Interior Alaska. IGU has developed an expanding distribution system and constructed a 5.25-million-gallon LNG storage facility in Fairbanks to improve energy reliability and supply.[107] The utility continues to expand its infrastructure to serve additional customers in the region.[108]

Aurora Enter LLC owns and operates a coal-fired power plant in Fairbanks that produces electricity, steam heat, and hot water for downtown customers. The facility supplies electricity to GVEA and operates a district heating system providing steam heat through an underground distribution network serving downtown Fairbanks. The plant has four steam turbines fueled by coal and one oil-fired electrical generator. In 2019, the steam heat served approximately 211 customers in the downtown area through an underground district system comprised of 15 miles of supply and return pipes.[109]

Fairbanks Sewer and Water (FSW) is the parent company for several utility subsidiaries, including College Utilities Corporation and Golden Heart Utilities, which together serve more than 8,500 customer accounts and over 55,000 people in the Fairbanks area.[110] These utilities provide essential water and wastewater services and are regulated by the State of Alaska.[111] The water treatment plant is in downtown Fairbanks and produces more than a billion gallons of treated water annually from four wells along the Chena River. The regional wastewater treatment plant is in South Fairbanks and accepts approximately 1.8 billion gallons of wastewater annually from the university, the army base, and commercial septage haulers. Connected to each of these plants are approximately 150 miles of water mains and 113 miles of sewer mains buried beneath the roads, serving residential, commercial, industrial, and institutional customers in the Fairbanks urban center. [112]

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[106] Golden Valley Electric Association. *System Description and Operations.*

[107] Interior Gas Utility. *Natural Gas Supply and Distribution System Information.* Petroleum News; AIDEA Interior Energy Project. *5.25-Million-Gallon LNG Storage Facility.*

[108] Interior Gas Utility. *Natural Gas Supply and Distribution System Information*.

[109] Aurora Energy, emails from Plant Engineer to EM staff Jan 03-05/2019

[110] Greater Fairbanks Chamber of Commerce. *Golden Heart Utilities and College Utilities Overview.*

[111] Nexus Water Group. *Fairbanks Water and Wastewater Utility Services.*

[112] Fairbanks Sewer and Water, email from Director of Operations to Emergency Manager 2/27/2019

The City of North Pole's utility system has expanded in recent years in response to groundwater contamination associated with the former refinery.[113] These improvements have included the expansion of municipal water service to previously unserved areas, which now includes 64 miles of buried water mains and 1,475 service connections. The North Pole Utility's wastewater service is available only within the city limits and comprises approximately 14 miles of sewer mains with approximately 475 service connections.[114]

3.7 Health Care

Fairbanks is a regional hub for medical services for the Interior and northern half of the state. Local hospitals and health clinics within the FNSB include Fairbanks Memorial Hospital (Foundation Health Partners), Bassett Army Community Hospital at Fort Wainwright, Chief Andrew Isaac Health Center (CAIHC), Tanana Valley Health Clinic, Interior Community Health Center (ICHC), and the Fairbanks Public Health Center. Additionally, there are many smaller clinics, urgent care centers, and healthcare practices within the Borough.

Foundation Health Partners (FHP) is a community-owned and operated integrated healthcare system serving Interior Alaska. FHP oversees Fairbanks Memorial Hospital (FMH), multiple Hospital-Based Clinics, Denali Center, and a comprehensive Home Services Program. FHP maintains comprehensive emergency operations, continuity of operations, and recovery plans across all components of the system to ensure continued access to patient care during any emergency.[115]

FMH is a 152-bed acute care facility providing a full spectrum of inpatient and outpatient services. Key capabilities include Intensive Care Unit (ICU) services, seven operating suites, and a Level IV Trauma Center–designated Emergency Department. FHP manages several specialty hospital-based clinics that support both routine and complex care needs. These include a 1st Care walk-in clinic, cardiology, cancer treatment, behavioral health, pediatrics, senior care, and many more. FMH operates the only civilian hospital in Interior Alaska. Its

[113] Alaska Department of Environmental Conservation. *North Pole Water System Expansion and Contamination Response.*

[114] North Pole Utilities, emails from North Pole Fire Chief 2/28/2019

[115] April and May 2026 conversations with Kelley Scott, Emergency Manager and Safety Program Manager, and Keith Fehr, Facility Operations Director and Safety Officer, Foundation Health Partners. 2024-2025 FHP Emergency Management Committee Meetings.

service area extends across the region north of the Alaska Range, making it a critical healthcare hub for remote and rural communities.[116]

Attached to FMH, Denali Center is a 90-bed facility providing comprehensive short-term rehabilitation and long-term skilled nursing care. It serves medically complex residents and supports continuity of care within the FHP system. Additionally, FHP's Home Health and Hospice Programs deliver skilled nursing, therapy, and end-of-life care to patients in the Interior who reside within a 35-mile radius of FMH.[117]

Bassett Army Community Hospital (BACH) on Fort Wainwright is the U.S. Army's primary hospital in Interior Alaska and serves the region's military population. The current facility is a 32-bed hospital, completed in 2006 and opened in 2007, providing a range of services, including primary and specialty care and emergency services, to DOD beneficiaries.[118]

The CAIHC is a major medical facility within the Borough serving Alaska Native populations through the TCC. The original facility opened in 2012.[119] The center provides outpatient services to a large service area representing over 40 Interior Alaska villages.[120]

An expansion project began in April 2020 and was completed in 2022, adding approximately 108,000 square feet to the existing 95,000 square feet facility and significantly expanding services, including an ambulatory surgery center, diagnostic imaging, and specialty care.[121] The expansion consists of a multi-story addition designed to support future growth, including unfinished space for future expansion.[122]

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[116] April and May 2026 conversations with Kelley Scott, Emergency Manager and Safety Program Manager, and Keith Fehr, Facility Operations Director and Safety Officer, Foundation Health Partners. 2024-2025 FHP Emergency Management Committee Meetings.

[117] April and May 2026 conversations with Kelley Scott, Emergency Manager and Safety Program Manager, and Keith Fehr, Facility Operations Director and Safety Officer, Foundation Health Partners. 2024-2025 FHP Emergency Management Committee Meetings.

[118] U.S. Army Corps of Engineers / U.S. Army. *Bassett Army Community Hospital construction and capacity (32-bed facility, completed 2006).* Bassett Army Community Hospital. *Facility history and opening of new hospital (2007).*

[119] Tanana Chiefs Conference / KUAC. *Chief Andrew Isaac Health Center opening (2012) and service region.*

[120] Tanana Chiefs Conference / KUAC. *Chief Andrew Isaac Health Center opening (2012) and service region.*

[121] Tanana Chiefs Conference; Architects Alaska. *CAIHC expansion (108,000 sq ft, completed 2022).*

[122] Tanana Chiefs Conference / KUAC. *Chief Andrew Isaac Health Center opening (2012) and service region.* Tanana Chiefs Conference; Architects Alaska. *CAIHC expansion (108,000 sq ft, completed 2022).*

In addition to clinical services, TCC operates a network of health and support facilities throughout the Interior, including residential treatment and support services, which complement outpatient medical care.

The ICHC was established in 1993 and provides medical, dental, behavioral health, preventative, and educational services to residents of Interior Alaska.[123] The clinic serves several thousand patients annually and provides tens of thousands of visits each year.

The Fairbanks Public Health Center, operated by the Alaska Department of Health, Division of Public Health, provides services including immunizations, disease control, and community health nursing to the FNSB and surrounding communities.[124] They serve residents through direct clinical services and community-based public health programs.

3.8 Emergency Services

The FNSB completed a Comprehensive Review of Emergency Medical Services (EMS) in 2011, which evaluated service delivery and system structure within the Borough. The FNSB operates a non-areawide emergency medical services district, meaning EMS and fire services are not uniformly provided throughout the Borough. The cities of Fairbanks and North Pole, as well as Fort Wainwright and Eielson AFB, operate their own emergency service systems and are not part of the Borough EMS service area.[125]

Fire and EMS within the Borough are primarily provided through a system of contracts with fire departments and service-area organizations, rather than a single centralized department.[126]

The local emergency services system is composed of a mix of municipal, state, federal, and volunteer organizations, which are dispatched through the Fairbanks system and include the following[127]:

- ★ City of Fairbanks Fire Department (FFD)
- ★ City of Fairbanks Police Department (FPD)

[123] Interior Community Health Center / IRS filings. *Established 1993 and service scope.*

[124] Alaska Department of Health, Division of Public Health. *Fairbanks Public Health Center services.*

[125] Fairbanks North Star Borough. *Emergency Operations and EMS system structure.*

[126] Fairbanks North Star Borough. *Emergency Operations and EMS system structure.*

[127] Fairbanks Emergency Communications Center. *Agencies served and regional response network.* City of Fairbanks. *Local Fire and EMS Departments Listing.*

- University Fire Department* (UFD)
- University Police Department (UPD)
- City of North Pole Fire Department (NPFD)
- City of North Pole Police Department (NPPD)
- Alaska State Troopers (AST)
- Steese Area Volunteer Fire Department* (SVFD)
- Chena-Goldstream Fire and Rescue* (CGFR)
- Salcha Fire and Rescue** (SFR)
- Fairbanks International Airport Police and Fire Department (FIA-PD/FIA-FD)
- North Star Volunteer Fire Department* (NSVFD)
- Ester Volunteer Fire Department* (EVFD)
- FNSB Emergency Operations Department
- FNSB Hazardous Materials (HazMat) Response Team (HMRT)

*Fire Service Area (FSA): Fire services in unincorporated portions of the Borough are organized into FSAs, which are governed locally and funded through property tax assessments. Residents and property owners within these areas pay mill rates to receive fire protection services. Areas outside established FSAs typically do not receive structural fire protection services, though wildland fire response may still be provided by state or federal agencies.

**Salcha Fire and Rescue operates under a membership-based model in which property owners pay annual fees for fire protection. The department may respond to non-member incidents on a fee-for-service basis and is also contracted by the Borough to provide EMS services.[128]

[128] Fairbanks Emergency Communications Center. *Agencies served and regional response network.*

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Emergency responders from Fort Wainwright and Eielson AFB regularly participate in mutual aid agreements, assisting with incidents across the Borough when requested.[129]

The Alaska National Guard may be activated during declared disasters under the authority of the Governor or the President, providing additional emergency response and logistical support.

Across Interior Alaska, fire and EMS response relies on a combination of career personnel supplemented by volunteer responders. Many community-based departments operate as non-profit or service-area organizations, particularly in rural and outlying areas.[130]

Historically, volunteer staffing provided strong coverage; however, like many jurisdictions nationwide, the Borough has experienced ongoing challenges recruiting and retaining volunteers in recent years.

- ★ To improve coordination and long-term planning, the Borough Assembly established the Regional Emergency Services Advisory Committee (RESAC). The committee's purpose is to:
- ★ Review fire and EMS service delivery
- ★ Evaluate risk, demand, and financial resources
- ★ Recommend service levels, station locations, and deployment strategies
- ★ Conduct public outreach on service expectations
- ★ Provide long-term recommendations for equitable delivery service.

This authority and scope are codified in the Borough ordinance.[131]

The Borough also has an EMS Advisory Committee, consisting of the EMS chiefs from contracted providers, the Borough Emergency Services Manager, and a representative from the Interior Region EMS Council. This structure supports operational coordination and medical oversight within the EMS system.[132]

[129] Fairbanks Emergency Communications Center. *Agencies served and regional response network.*

[130] Fairbanks Emergency Communications Center. *Agencies served and regional response network.*

[131] Fairbanks North Star Borough Code. *Regional Emergency Services Advisory Committee (Powers and Duties).*

[132] Interior Region EMS Council. *Regional EMS coordination structure.*

There is one primary Public Safety Answering Point (PSAP) or 911 center in the Borough:

- ★ Fairbanks Emergency Communications Center (FECC) – Primary dispatch center

FECC operates 24/7 and dispatches services for more than 20 police, fire, and EMS agencies across the region.[133]

Additional (secondary/tertiary) dispatch or support centers include:

- ★ Alaska State Troopers (AST)
- ★ Fairbanks International Airport (FIA)
- ★ University of Alaska Fairbanks (UAF)
- ★ Fort Wainwright Emergency Services
- ★ Eielson AFB Emergency Services
- ★ Alaska Division Forestry and Fire Protection (DFFP)

These agencies either maintain dispatch capability or coordinate through the regional emergency communications system.[134]

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[133] Fairbanks Emergency Communications Center. *911 dispatch operations and service coverage.* [fairbanks.gov]

[134] Fairbanks Emergency Communications Center. *911 dispatch operations and service coverage.*

4. Risk Assessment and Hazard Identification

FEMA regulation 44 CFR §201.6(c)(2)(i) defines the process of risk assessment as:

> "…providing the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessment must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment shall include a description of the type, location, and extent of all-natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events [among others]."

The risk assessment provides the foundation for identifying and prioritizing mitigation actions to reduce losses from natural hazards. This process includes an evaluation of the type, location, and extent of hazards, past occurrences, and the probability of future hazard events.[135]

The FEMA Local Mitigation Planning Handbook further emphasizes that risk assessment should evaluate hazards, exposure, and vulnerability, which together determine the level of risk a community faces.[136]

Hazard impacts result from the interaction of three key systems:

- Natural systems (e.g., atmosphere, hydrosphere, cryosphere, biosphere, and geologic systems)
- Human systems (e.g., population, demographics, economics, and vulnerable populations)
- The built environment (e.g., buildings, infrastructure, and critical facilities)

These systems are interconnected, and disruptions to one system, particularly critical infrastructure lifelines such as power, transportation, and communications, can have cascading impacts across the community.[137]

[135] FEMA. *44 CFR §201.6 – Local Mitigation Plans (Risk Assessment Requirements).*

[136] FEMA. *Local Mitigation Planning Handbook (2013, with ongoing updates and policy memos).*

[137] FEMA. *Community Lifelines Implementation Toolkit and National Response Framework (2019–present).*

Recent FEMA guidance also emphasizes the importance of considering future conditions, including climate variability, development patterns, and demographic changes, as these factors may influence the frequency and severity of hazard impacts over time.[138]

Community survey results, including input on hazard concerns, past impacts, and locally identified vulnerabilities (Appendix C), were used to validate and supplement hazard identification, risk assessment, and vulnerability analysis.

4.1 Components of Risk Assessment

The risk assessment for the hazard mitigation plan consists of four primary components:

1) Hazard Identification
2) Hazard Profiling
3) Asset Inventory (Exposure)
4) Vulnerability and Loss Estimation

These components are consistent with FEMA guidance, which defines risk assessment as an evaluation of hazards, the assets exposed to those hazards, and the potential impacts and losses that may result.[139]

Together, these components provide the foundation for understanding risk and prioritizing mitigation actions to reduce future hazard losses, as required under 44 CFR §201.6(c)(2).[140]

The results of this risk assessment provide the foundation for the mitigation strategy and actions presented in Chapters 10 and 11.

4.2 Future Conditions and Changing Risks

Hazard risk in the FNSB is influenced not only by current conditions, but also by long-term environmental, climatic, and development trends that may alter hazard frequency, severity, and impacts over time. Consistent with FEMA guidance, this section summarizes key future conditions that may influence risk across the planning area.

[138] FEMA. *Local Mitigation Planning Handbook (2013, with ongoing updates and policy memos).*

[139] FEMA. 44 CFR §201.6(c)(2) – Local Mitigation Plan Risk Assessment Requirements. FEMA. Local Mitigation Planning Handbook (2013, current guidance)

[140] FEMA. 44 CFR §201.6(c)(2) – Local Mitigation Plan Risk Assessment Requirements.

Key considerations include:

- Permafrost Thaw and Ground Instability: Warming temperatures are contributing to permafrost degradation across the region, resulting in increased ground instability, settlement, and infrastructure vulnerability. These changes are expected to continue and may increase maintenance costs, infrastructure failures, and long-term hazard exposure.

- Changes in Severe Weather Patterns: Observed and projected changes in climate are contributing to shifts in the frequency and intensity of severe weather events, including extreme cold, heavy snowfall, and freezing rain. Emerging hazards such as winter rain events can result in cascading impacts to transportation, utilities, and emergency response systems.

- Development Patterns and Exposure: Ongoing residential and infrastructure development, including expansion into wildland-urban interface areas and areas with permafrost or limited infrastructure, may increase exposure to multiple hazards. Changes in population distribution and land use may also influence evacuation, response, and recovery capabilities.

These factors are considered qualitatively within individual hazard profiles and are reflected in the prioritization of mitigation actions. While not all future conditions can be quantified, they are incorporated into the risk assessment to ensure that mitigation strategies address both current and emerging risks.

This approach aligns with FEMA requirements to consider changes in development, hazard trends, and future conditions when assessing risk.

These hazards reflect both historical occurrence and current risk conditions within the Borough and are carried forward into the detailed hazard profiles and risk analysis presented in subsequent sections.

4.3 Hazard Identification - **"What kind of natural hazards affect the Borough?"**

Each hazard profile evaluates the nature, extent, historical occurrence, and potential impacts of hazard events, providing a consistent framework for risk comparison across hazards.

The first step in conducting a risk assessment is to identify the natural hazards that can occur within the Borough. A natural hazard is a source of harm or difficulty created by a meteorological, environmental, or geological event. Consistent with FEMA requirements,

jurisdictions must identify and describe the hazards that can affect the planning area, their location, extent, and history.[141]

The Borough followed FEMA guidance during hazard identification by reviewing existing plans and reports, analyzing historical records, consulting subject matter experts, gathering public input, and researching available state and federal datasets. This process supports FEMA's requirement that hazard identification be based on multiple data sources, including local knowledge and documented hazard history.[142] A comprehensive list of hazards was developed and evaluated by the planning team, which then screened hazards based on their likelihood, historical occurrence, and potential impacts within the Borough.

During the hazard screening process, the planning team considered a broad range of hazards, including both natural hazards and other risks that could impact community resilience. Natural hazards evaluated included wildfire; severe weather (e.g., wind, snow, freezing rain in winter, lightning, thunderstorms, and extreme temperatures); flooding (including riverine and ice-jam flooding); seismic activity; and ground failure (including erosion, landslides, sinkholes, and permafrost-related instability).[143]

The planning team also reviewed additional hazards that may have lower probability but higher consequences, such as earthquakes, dam or levee failures, and extreme weather events. Non-natural hazards (e.g., hazardous materials incidents, cyber threats, and supply chain disruptions) were reviewed for broader emergency planning purposes but are not included in this hazard mitigation plan's core natural hazard risk assessment in accordance with FEMA requirements.[144]

Based on this evaluation, the planning team identified the following five primary natural hazards for detailed analysis in this plan:

1) Wildfire (including wildland and urban conflagration (structure-to-structure))

2) Severe Weather (including wind, snow, freezing rain in winter, lightning, and extreme weather events)

[141] FEMA. 44 CFR §201.6(c)(2) – Local Hazard Mitigation Planning Requirements (Risk Assessment).

[142] FEMA. Local Mitigation Planning Handbook (2013, current guidance) – Hazard Identification & Risk Assessment Framework.

[143] FEMA. Local Mitigation Plan Review Guide (2011) – Criteria for hazard identification and hazard screening.

[144] FEMA. 44 CFR §201.6(c)(2) – Local Hazard Mitigation Planning Requirements (Risk Assessment).

3) Flooding (riverine flooding, ice dams, ponding, levee break, dam failure, and localized drainage issues)

4) Seismic Hazards (earthquakes)

5) Ground Failure (erosion, landslides, sinkholes, and permafrost degradation (cryosphere-related hazards))

These hazards represent those with the greatest relevance based on local conditions, historical occurrence, and potential impacts to people, property, and infrastructure within the Borough.[145]

FEMA guidance emphasizes that hazard identification and profiling should include a description of the hazard type, historical occurrences, geographic extent, magnitude and severity, and probability of future events. The following subsections provide detailed hazard profiles for each identified hazard, including an assessment of past events, potential future conditions, and expected impacts.

Hazards are presented in the following sections in order of relative risk and priority, based on the results of the hazard ranking and risk assessment process.

4.4 Profile Hazard Events - **"How bad can it get?"**

Tables 4-1 and 4-2 summarize hazard probability, frequency, and extent across the Borough and provide context for evaluating the exposure and vulnerability of assets discussed in this section.

The second step of the risk assessment involves profiling each identified hazard to understand its potential impacts on the Borough. Hazard profiling includes an assessment of location, extent (magnitude and severity), previous occurrences, and the probability for future events.[146]

Information used to develop hazard profiles was derived from multiple sources, including Alaska DHS&EM records, National Weather Service (NWS) data, local Emergency Operations Plans (EOPs), Hazard Vulnerability Analysis (HVA), and other federal, state, and local

[145] FEMA. Local Mitigation Planning Handbook (2013, current guidance) – Hazard Identification & Risk Assessment Framework.

[146] FEMA. 44 CFR §201.6(c)(2) – Local Mitigation Plan Risk Assessment Requirements.

datasets. Where available, recent data trends have been incorporated to reflect current conditions and emerging risks.[147]

Probability, frequency, and extent ratings are based on a combination of historical data, available state and federal datasets, location EOPs, HVAs, and input from subject matter experts. Where quantitative data is limited, ratings are based on the best available information and professional judgment.[148]

The following tables provide a comparative overview of hazards affecting the Borough and participating jurisdictions. Detailed hazard-specific discussions, including historical occurrences and impacts, are provided in the following subsections.[149]

Table 4-1: Hazard Probability Summary

Hazard	FNSB	Fairbanks	North Pole
Wildfire (Wildland Fire & Urban Conflagration (Structure-to-Structure))	High	High	High
Severe Weather	High	High	High
Flooding	Medium	Medium	Medium
Seismic	Medium	Medium	Medium
Ground Failure*	Medium	Medim	Medium
*Include erosion, landslide, and permafrost degradation (cryosphere-related hazards) Key: -High: Likely to occur frequently (regular or recurring events) -Medium: Occurs occasionally (periodic events) -Low: Occurs infrequently (rare events)			

[147] FEMA. Local Mitigation Planning Handbook (2013, current guidance).

[148] FEMA. Local Mitigation Planning Handbook (2013, current guidance).

[149] FEMA. 44 CFR §201.6(c)(2) – Local Mitigation Plan Risk Assessment Requirements. FEMA. Local Mitigation Planning Handbook (2013, current guidance).

Table 4-2: Hazard Frequency and Extent Summary

Hazard	Frequency (FNSB)	Extent (FNSB)	Frequency (Community Level)	Extent (Community Level)
Wildfire (Wildland Fire and Urban Conflagration (Structure-to-Structure)	Frequent	Limited to High	Occasional to Frequent	Limited to High
Severe Weather	Frequent	Limited to High	Frequent	Limited to High
Flooding	Occasional	Limited to Moderate	Occasional	Limited to Moderate
Seismic	Occasional	Moderate to High	Occasional	Moderate to High
Ground Failure	Occasional	Limited to Moderate	Occasional	Limited to Moderate

Key:
Frequency
-Frequent: Occurs regularly (annual or near-annual events)
-Occasional: Occurs periodically (multi-year recurrence)
-Rare: Occurs infrequently
Extent (Impact Severity)
-Zero: Used for historical information. An event occurred but caused no damage or loss
-Limited: Minimal to moderate localized damage
-Moderate: Widespread impacts requiring coordinated response
-High: Significant impacts affecting major portions of the community

Detailed hazard profiles, including spatial analysis of hazard extent, relative risk, and exposure to critical infrastructure, are provided in Chapters 5 through 9.

4.5 Inventory Assets - **"What is at risk?"**

The third step of risk assessment is to identify the assets exposed to hazards and assess the Borough's vulnerability. This includes an inventory of the people, infrastructure, and property that could be affected during a hazard event, consistent with FEMA requirements.[150]

Population exposure includes not only residents but also employees, commuters, shoppers, tourists, and others present within the jurisdiction at any given time. Special consideration is given to populations that may be more vulnerable to hazard impacts, including children, older adults, individuals with disabilities, and other populations with access and functional

[150] FEMA. 44 CFR §201.6(c)(2) – Local Mitigation Plan Risk Assessment Requirements.

needs, as well as the facilities they may occupy, such as schools, senior housing, and health facilities.[151]

An inventory of the FNSB's' and participating cities' assets is a critical component of the vulnerability assessment. This includes buildings, critical facilities, infrastructure systems, and community lifelines. Identifying these assets helps determine the potential exposure and susceptibility to damage from hazard events.[152]

For a multi-jurisdictional plan, the risk assessment must evaluate vulnerability for each jurisdiction individually where risks differ across the planning area, in accordance with FEMA guidance.[153]

4.5.1 Population

Social Vulnerability

Communities must prepare for and respond to hazardous events, including natural hazards such as wildfire, flooding, and severe weather. A community's ability to prevent human suffering and financial loss during disasters is influenced by a variety of social, economic, and demographic factors. These factors, such as poverty, lack of access to transportation, and crowded housing, are collectively referred to as social vulnerability.[154]

Social vulnerability is an important component of risk because individuals and populations with limited resources or reduced capacity may be more adversely affected by hazard events and may require additional support during response and recovery. Special consideration is given to populations with access and functional needs, including children, older adults, individuals with disabilities, and those with limited English proficiency.[155]

The Centers for Disease Control and Prevention (CDC) Agency for Toxic Substances and Disease Registry (ATSDR) Social Vulnerability Index (SVI) uses U.S. Census data to assess the relative vulnerability of census tracts. The SVI evaluates 15 social variables and groups them into four themes:

[151] FEMA. Local Mitigation Planning Handbook (2013, current guidance).

[152] FEMA. Local Mitigation Planning Handbook (2013, current guidance).

[153] FEMA. 44 CFR §201.6(c)(2) – Local Mitigation Plan Risk Assessment Requirements. FEMA. Local Mitigation Planning Handbook (2013, current guidance).

[154] FEMA. Local Mitigation Planning Handbook (2013, current guidance).

[155] FEMA. 44 CFR §201.6(c)(2) – Risk Assessment (Vulnerability considerations).

1) Socioeconomic Status

2) Household Composition and Disability

3) Minority Status and Language

4) Housing Type and Transportation

Each census tract receives a ranking for each theme, as well as an overall ranking that reflects its relative vulnerability compared to other census tracts nationwide.[156]

Maps illustrating the distribution of SVI themes with the FNSB are provided below. These maps are used to identify areas where populations may be more vulnerable to hazard impacts and to support prioritization of mitigation actions.

The CDC/ATSDR SVI is used to identify communities that may be disproportionately impacted by hazard events and may require additional support during response and recovery. The SVI ranks geographic areas based on 16 social factors, including socioeconomic status, household characteristics, minority status, and housing and transportation, which are grouped into four themes. Higher percentile rankings indicate greater social vulnerability.

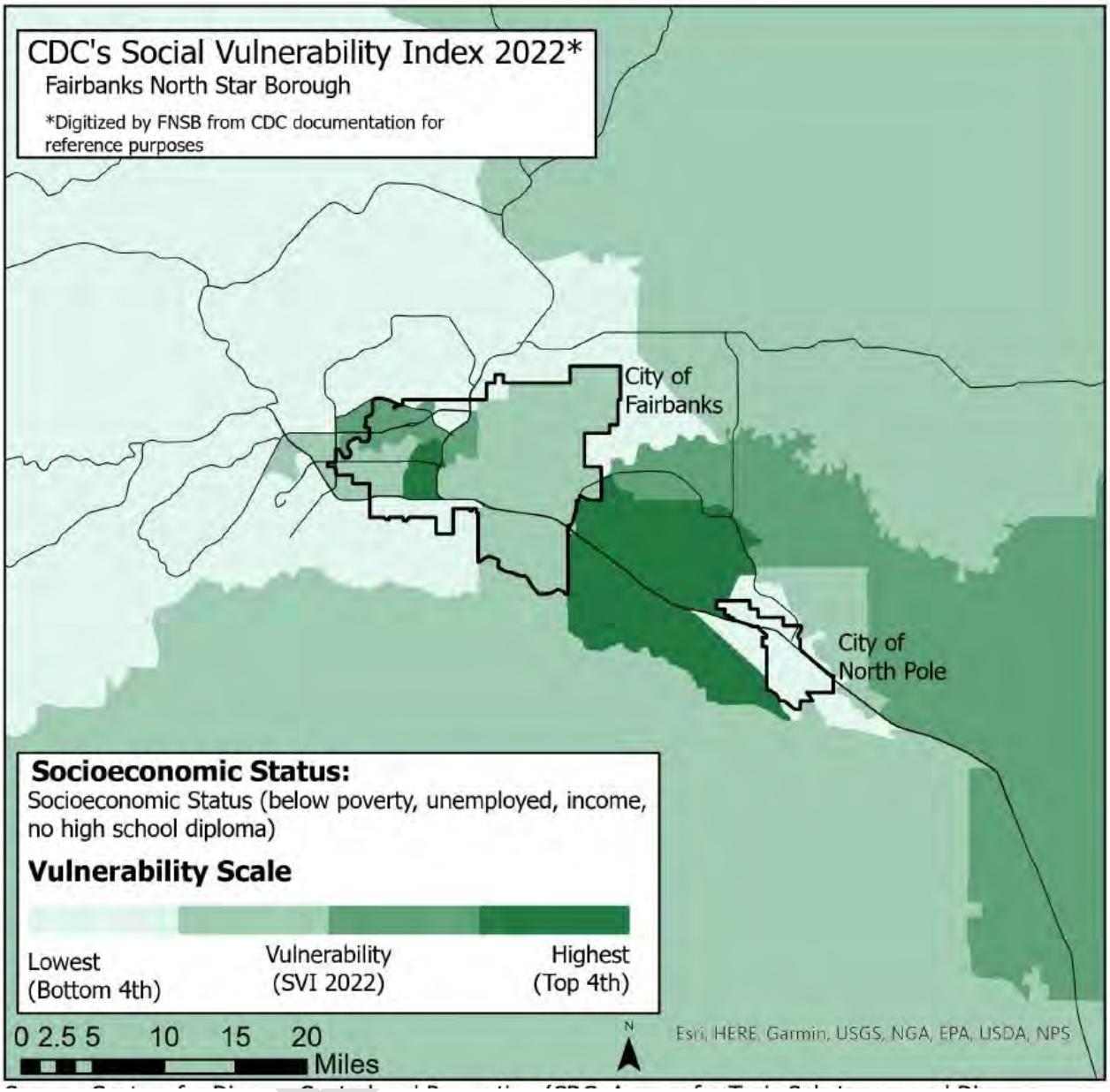
This plan incorporates the most recent available SVI data (2018–2022 American Community Survey), reflecting updated demographic and social conditions across the FNSB.

Figures 4-1 through 4-4 illustrate the distribution of social vulnerability factors across the Borough using the CDC SVI. These maps highlight areas with higher concentrations of populations that may be more susceptible to hazard impacts due to socioeconomic conditions, household composition, language barriers, and access to transportation.

Areas with elevated SVI scores may require additional consideration in mitigation planning, including targeted outreach, emergency communication strategies, and resource allocation to support vulnerable populations.

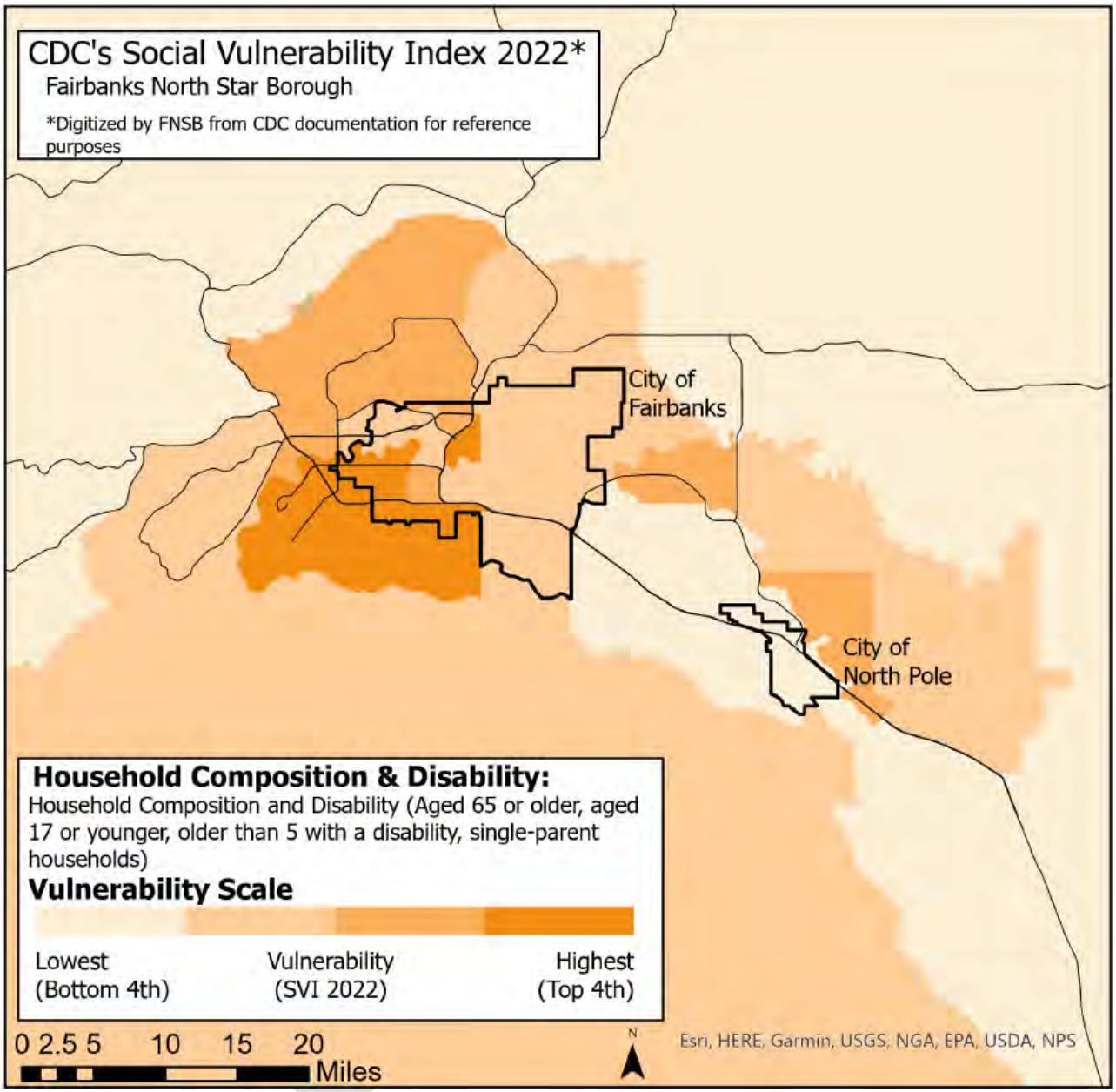
[156] Centers for Disease Control and Prevention (CDC), Agency for Toxic Substances and Disease Registry (ATSDR). Social Vulnerability Index (SVI).

Figure 4-1: Map of CDC/ATSDR Social Vulnerability Index (SVI) - Socioeconomic Status (2022)



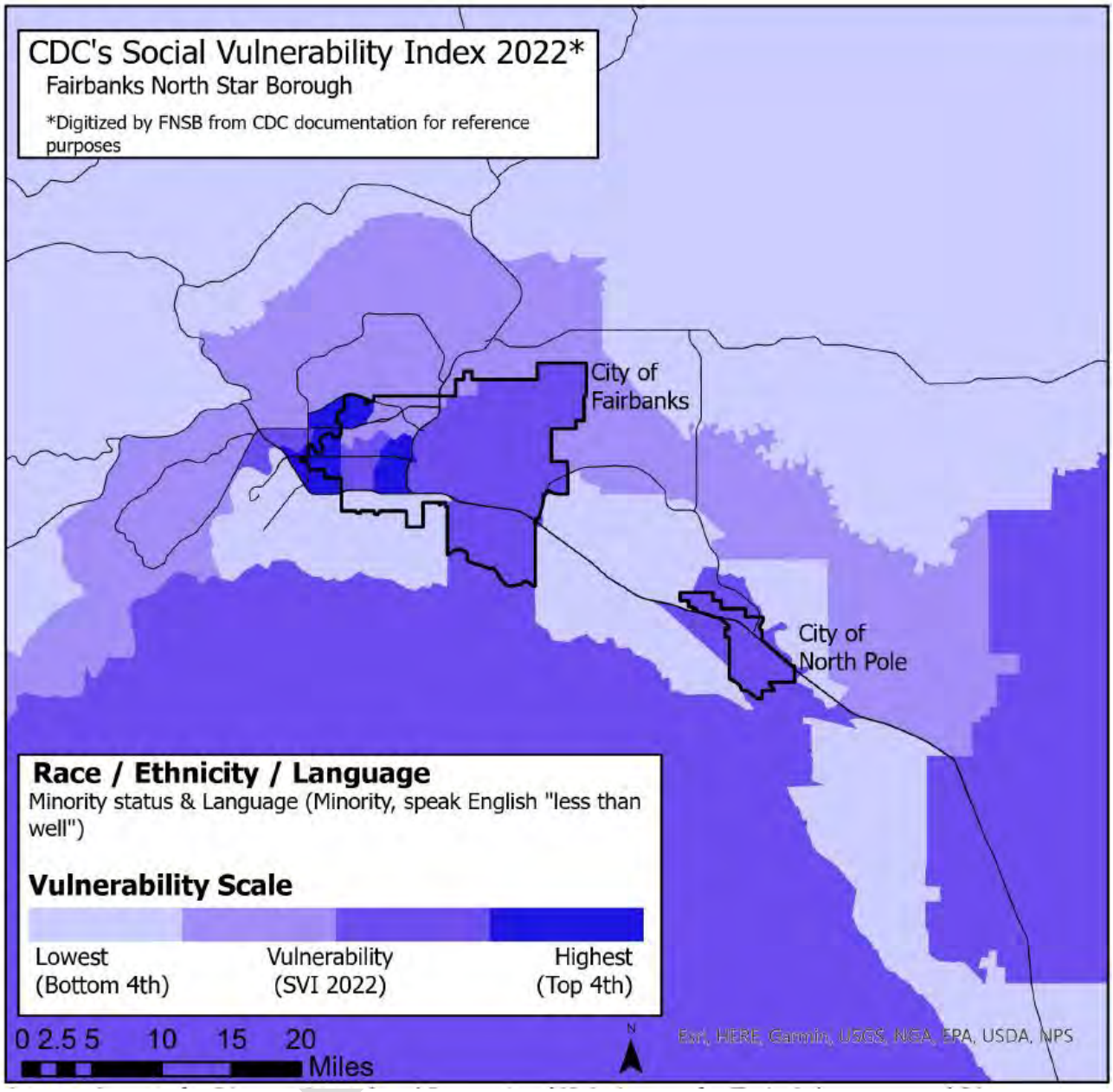
Source: Centers for Disease Control and Prevention (CDC), Agency for Toxic Substances and Disease Registry (ATSDR), Social Vulnerability Index (SVI), 2022. Fairbanks North Star Borough GIS, Fairbanks North Star Borough GIS, Fairbanks North Star Borough Department of Emergency Operations, Retrieved 6/1/2026.

Figure 4-2: Map of CDC/ATSDR Social Vulnerability Index (SVI) - Household Composition and Disability (2022)



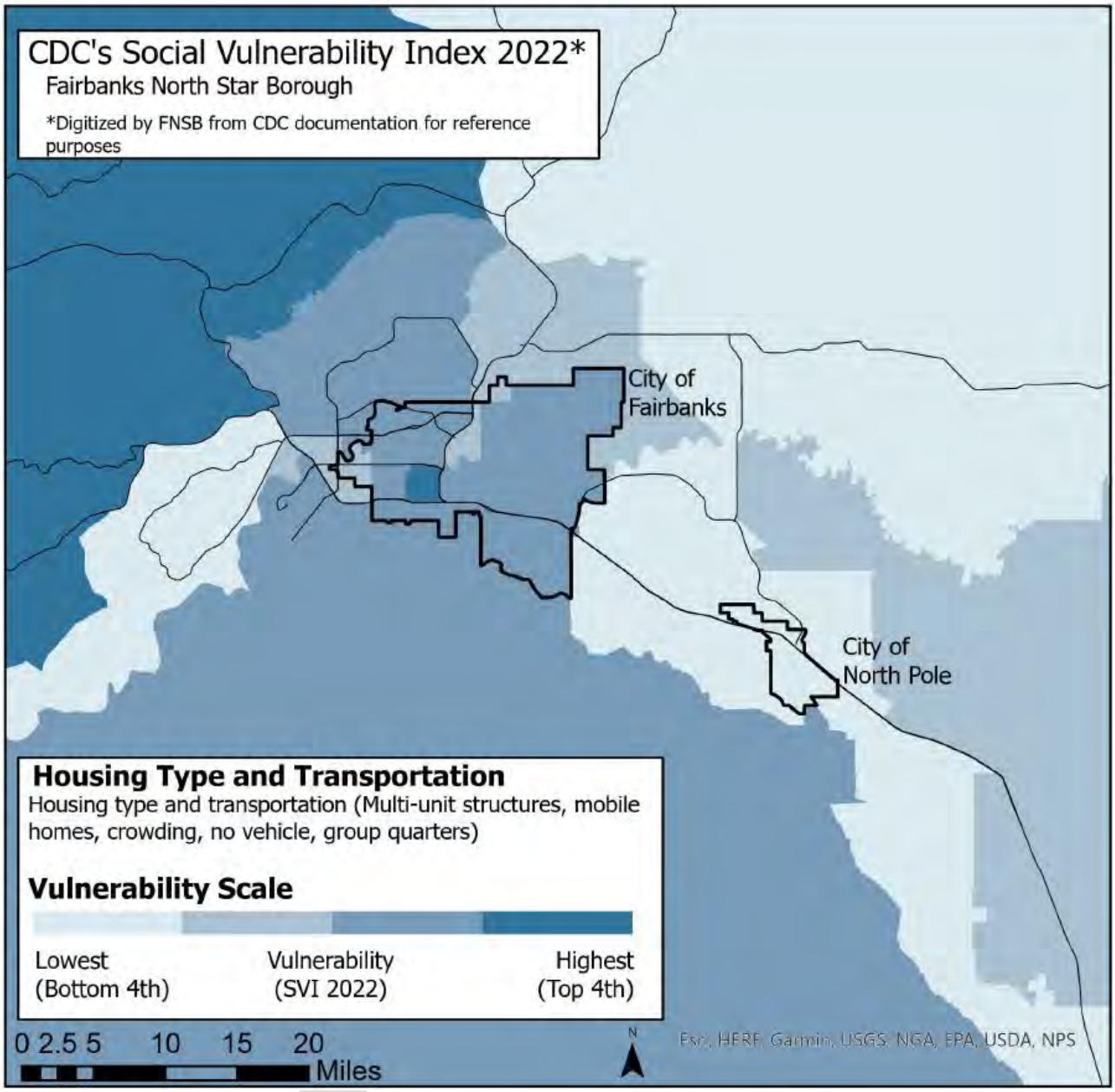
Source: Centers for Disease Control and Prevention (CDC), Agency for Toxic Substances and Disease Registry (ATSDR), Social Vulnerability Index (SVI), 2022. Fairbanks North Star Borough GIS, Fairbanks North Star Borough GIS, Fairbanks North Star Borough Department of Emergency Operations, Retrieved 6/1/2026.

Figure 4-3: Map of CDC/ATSDR Social Vulnerability Index (SVI) - Minority Status and Language (2022)



Source: Centers for Disease Control and Prevention (CDC), Agency for Toxic Substances and Disease Registry (ATSDR), Social Vulnerability Index (SVI), 2022. Fairbanks North Star Borough GIS, Fairbanks North Star Borough GIS, Fairbanks North Star Borough Department of Emergency Operations, Retrieved 6/1/2026.

Figure 4-4: Map of CDC/ATSDR Social Vulnerability Index (SVI) – Housing Type and Transportation (2022)



Source: Centers for Disease Control and Prevention (CDC), Agency for Toxic Substances and Disease Registry (ATSDR), Social Vulnerability Index (SVI), 2022. Fairbanks North Star Borough GIS, Fairbanks North Star Borough GIS, Fairbanks North Star Borough Department of Emergency Operations, Retrieved 6/1/2026.

Senior Population Needs

The senior population (generally defined as age 60 and older) represents one of the fastest-growing demographic groups in Alaska and the FNSB. As this population continues to grow,

understanding the specific needs and vulnerabilities of older adults is important for hazard mitigation planning and emergency management.[157]

Older adults may be disproportionately affected by hazard events due to factors such as mobility limitations, medical needs, fixed incomes, and reliance on support services. These conditions can increase vulnerability during the evacuation, response, and recovery phases of a disaster. Special consideration must be given to ensuring access to transportation, healthcare, and communication systems during emergency events.[158]

Areas with higher concentrations of older adults may also be associated with higher social vulnerability, as measured by the SVI, further increasing potential risk during hazard events.[159]

Within the FNSB, seniors may reside independently, in assisted living facilities, or in specialized housing. Identifying these populations and associated facilities helps inform planning efforts to reduce risk and prioritize mitigation actions. Incorporating the needs of older adults supports more effective preparedness, response, and recovery planning and strengthens overall community resilience.[160]

Key Demographic Trends

The population of older adults (generally defined as age 60 and older) in the FNSB has been increasing and is expected to continue growing, consistent with statewide demographic trends. Alaska is experiencing an overall population aging as life expectancy increases and younger residents migrate, resulting in a higher proportion of older residents.[161]

In addition to overall growth in the senior population, the number of older seniors, particularly those aged 80 and above, is increasing at a faster rate. This group is more likely to require assistance with daily living, healthcare services, and emergency support during hazard events, thereby increasing vulnerability. As age increases, vulnerability to hazard

[157] Alaska Commission on Aging; State of Alaska. Demographic trends and aging population data (most recent available).

[158] FEMA. Local Mitigation Planning Handbook (2013, current guidance) – Vulnerable populations and risk assessment considerations.

[159] Centers for Disease Control and Prevention (CDC), Agency for Toxic Substances and Disease Registry (ATSDR). Social Vulnerability Index (SVI).

[160] FEMA. Local Mitigation Planning Handbook (2013, current guidance) – Vulnerable populations and risk assessment considerations.

[161] Alaska Commission on Aging; State of Alaska. Demographic trends and aging population data (most recent available).

events also generally increases due to greater likelihood of mobility limitations, medical needs, and reliance on support services, with the most significant impacts typically affecting populations age 75 and older. The most significant growth is expected among the oldest age group (ages 80 and older), with implications for emergency response, healthcare demand, and access to services during hazard events.[162]

As the proportion of older residents grows, the demand for accessible housing, transportation, healthcare services, and emergency planning considerations is expected to increase. Understanding these demographic trends helps inform mitigation planning and ensures that the needs of older adults are incorporated into preparedness, response, and recovery actions. Areas with higher concentrations of older adults may also correspond with increased social vulnerability, as reflected in SVI data.[163]

As shown in Table 4-3, the Borough is experiencing an increase in the older adult population, which may increase vulnerability during hazard events due to mobility limitations, medical needs, and reliance on support services. These demographic trends highlight the importance of incorporating access-and-functional-needs populations into emergency planning and mitigation strategies.

Table 4-3: Key Demographic Trends – Older Adult Population (Estimated)

Population Age	Current Estimate (≈2023-2024)	Projected Range (2035)	Trend
60+	~18,000-20,000	~23,000-26,000	Increasing
65+	~12,000-14,000	~17,000-20,000	Increasing
70+	~8,500-10,500	~13,000-16,000	Increasing
75+	~5,000-6,5000	~9,000-11,000	Increasing
80+	~2,000-2,500	~1754,000-5,000	Rapid Increase

Source: U.S. Census Bureau, American Community Survey (ACS) 5-Year Estimates (most recent available); Alaska Department of Labor and Workforce Development; Alaska Commission on Aging.

Table 4-3 Note: Population estimates are derived from U.S. Census Bureau ACS data and State of Alaska demographic trends. Projections are based on observed aging trends, including increasing life expectancy and demographic shifts in Alaska's population. These estimates are intended to illustrate general growth trends rather than provide precise forecasts.

[162] FEMA. Local Mitigation Planning Handbook (2013, current guidance) – Vulnerable populations in risk assessment.

[163] Centers for Disease Control and Prevention (CDC), Agency for Toxic Substances and Disease Registry (ATSDR). Social Vulnerability Index (SVI).

The Continuum of Care

To help older adults maintain independence for as long as possible, housing, services, and supports are typically provided along a continuum of care ranging from services delivered in homes and communities to more intensive care in assisted living facilities, skilled nursing facilities, and acute care hospitals.[164]

Access to lower levels of care (shown in the circle wrapping around the senior living independently in Figure 4-5), such as in-home services, community-based support programs, and caregiver assistance, can help prevent or delay the need for more costly and intensive institutional care. Aging and Disability Resource Centers (ADRCs) and care coordinators assist individuals and caregivers in identifying and accessing appropriate services across this continuum.[165]

Gaps within the continuum of care can increase vulnerability during hazard events. When individuals are unable to access appropriate levels of care in their communities, they may rely on higher-level, more resource-intensive care that is less accessible during emergencies. This can create additional challenges for evacuation, sheltering, and continuity of care during disasters.[166]

Understanding the continuum of care for older adults helps inform hazard mitigation planning by identifying where service limitations may increase risk and where targeted strategies can improve resilience for vulnerable populations.[167]

Older adults who rely on services across this continuum may be particularly vulnerable during disruptions to infrastructure, transportation, and healthcare systems caused by hazard events.

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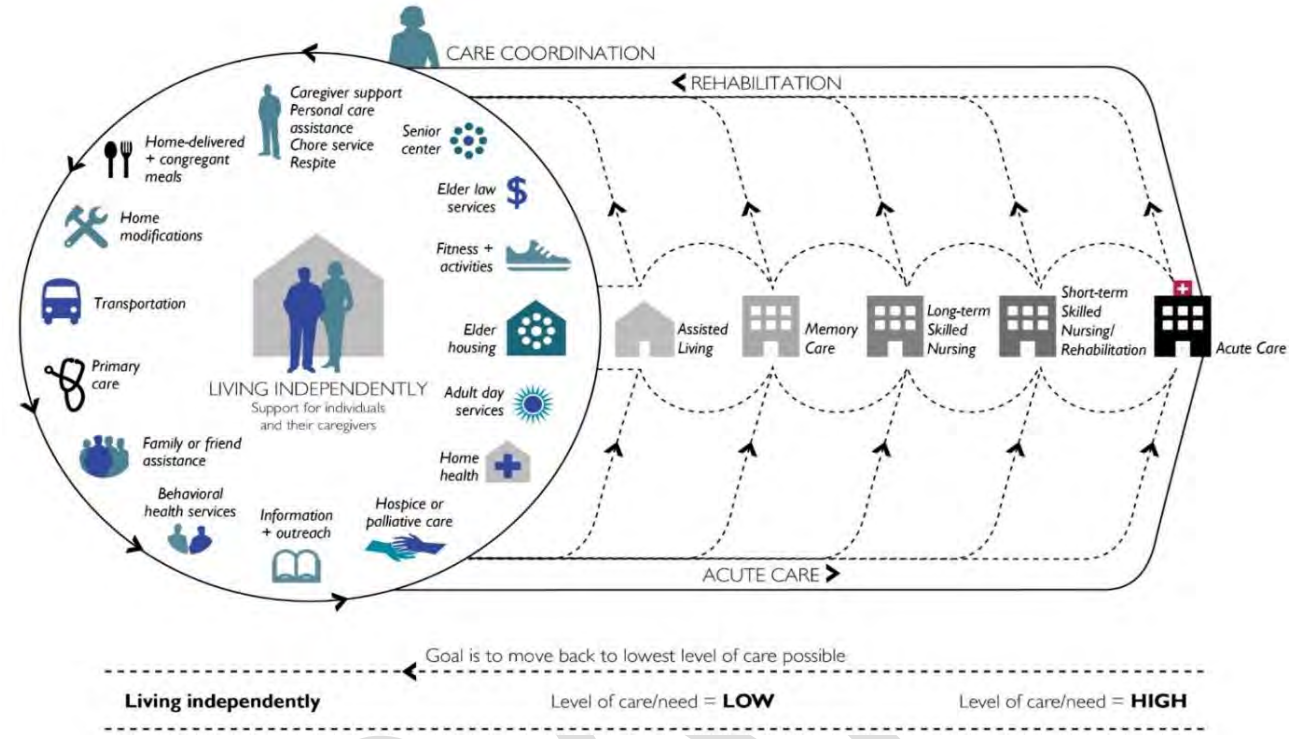
[164] U.S. Department of Health and Human Services, Administration for Community Living (ACL). Aging and Disability Resource Centers and Long-Term Services and Supports (LTSS) framework.

[165] U.S. Department of Health and Human Services, Administration for Community Living (ACL). Aging and Disability Resource Centers and Long-Term Services and Supports (LTSS) framework.

[166] FEMA. Local Mitigation Planning Handbook (2013, current guidance) – Vulnerable populations and access to services.

[167] FEMA. Local Mitigation Planning Handbook (2013, current guidance) – Vulnerable populations and access to services.

Figure 4-5: The Long-Term Services and Supports Continuum of Care for Seniors



Source: FNSB Senior Needs Assessment, 2019, North Star Council on Aging/Fairbanks Senior Center

Greatest Senior Needs

The population of older adults continues to grow both statewide and within the Borough, increasing demand for services, housing, and long-term care supports.[168]

Previous assessments of senior needs in the FNSB, including the FNSB Senior Needs Assessment, identified key themes related to services, housing, and support systems for older adults. These identified needs continue to inform an understanding of vulnerability within the community and highlight areas where service limitations may increase risk during hazard events.[169]

[168] Alaska Commission on Aging; Alaska Department of Labor and Workforce Development. Statewide demographic and population trends (most recent available).

[169] Fairbanks North Star Borough Senior Needs Assessment (2019), Agnew::Beck Consulting; Alaska Commission on Aging.

Services

Home and community-based services provide critical support that allows older adults to remain independent; however, these services are often constrained by funding limitations and workforce capacity.

Transportation remains a significant barrier, with limited availability of accessible, door-to-door services and capacity challenges among providers.

Care coordination and access to services such as assisted living and Medicaid-supported programs may be delayed due to demand exceeding available resources.[170]

Additional challenges include limited access to healthcare providers accepting Medicare, workforce shortages in caregiving roles, and an aging volunteer base. Services such as home modifications, legal assistance, and advocacy are also constrained by capacity and funding but play an important role in reducing risk, supporting independence, and preventing institutionalization.[171]

Workforce shortages in healthcare, caregiving, and support services continue to affect the availability and accessibility of services for older adults, which may increase vulnerability during hazard events that disrupt access to care and support systems.[172]

Housing and Facility-Based Care

There continues to be a need for affordable, accessible, and quality senior housing options within the Borough. Limited availability of independent housing, assisted living, and specialized care settings can lead to longer wait times and reduced housing stability for older adults. In particular, affordable, income-restricted senior independent housing often has wait times ranging from several months to over a year. Recent development of additional senior housing and assisted living facilities within the Borough has improved overall capacity; however, demand for affordable, accessible, and specialized housing options continues to exceed supply.

[170] Fairbanks North Star Borough Senior Needs Assessment (2019), Agnew::Beck Consulting; Alaska Commission on Aging.

[171] Fairbanks North Star Borough Senior Needs Assessment (2019), Agnew::Beck Consulting; Alaska Commission on Aging.

[172] FEMA. Local Mitigation Planning Handbook (2013, current guidance) – Vulnerable populations, service capacity, and access to resources.

Challenges also include limited availability of culturally appropriate services for Alaska Native elders, variability in assisted living quality, and insufficient capacity for individuals with higher care needs, including those with dementia or behavioral health conditions. These constraints can increase the likelihood that seniors reside in settings that may not meet their needs.[173]

Gaps in housing and service capacity can increase vulnerability during hazard events by limiting evacuation options, reducing access to care, and increasing reliance on already strained systems, particularly during prolonged disruptions to infrastructure and services. Addressing these needs supports resilience by improving the ability of older adults to safely shelter, evacuate, and recover during and after disasters.[174]

4.5.2 Infrastructure

The FNSB contains a wide range of critical infrastructure across multiple sectors as defined by the U.S. Department of Homeland Security (DHS) and supports key community lifelines, including transportation, energy, communications, healthcare, and water systems. Critical Infrastructure sectors present within the Borough include:[175]

- Chemical Sector: The Chemical Sector is an integral component of the U.S. economy that manufactures, stores, uses, and transports potentially dangerous chemicals upon which a wide range of other critical infrastructure sectors rely.
- Commercial Facilities Sector: The Commercial Facilities Sector includes a diverse range of sites that draw large crowds of people for shopping, business, entertainment, or lodging.
- Communications Sector: The Communications Sector is a diverse, competitive, and interconnected industry using terrestrial, satellite, and wireless transmission systems. The transmission of these services has become interconnected; satellite, wireless, and wireline providers depend on each other to carry and terminate their traffic and companies routinely share facilities and technology to ensure interoperability.

[173] Fairbanks North Star Borough Senior Needs Assessment (2019), Agnew::Beck Consulting; Alaska Commission on Aging.

[174] FEMA. Local Mitigation Planning Handbook (2013, current guidance) – Vulnerable populations and access to services.

[175] U.S. Department of Homeland Security (DHS). National Infrastructure Protection Plan (NIPP) and Critical Infrastructure Sectors.

- Dams Sector: The Dams Sector assets within the FNSB provide critical water retention and control services supporting flood control, industrial waste management, and recreation.

- Defense Industrial Base Sector: The Defense Industrial Base Sector provides products and services that are essential to mobilize, deploy, and sustain military operations.

- Emergency Services Sector: The Emergency Services Sector (ESS) is a community of highly skilled, trained personnel, along with the physical and cyber resources, that provide a wide range of prevention, preparedness, response, and recovery services during both day-to-day operations and incident response.

- Energy Sector: The energy infrastructure is divided into three interrelated segments: electricity, oil, and natural gas.

- Financial Services Sector: The Financial Services Sector includes depository institutions, providers of investment products, insurance companies, other credit and financing organizations, and the providers of the critical financial utilities and services that support these functions.

- Government Facilities Sector: The Government Facilities Sector includes a wide variety of buildings, located in the United States and overseas, that are owned or leased by federal, state, local, and tribal governments.

- Healthcare and Public Health (HPH) Sector: Includes publicly accessible healthcare facilities, research centers, suppliers, manufacturers, and other physical assets and public-private information technology systems required for care delivery and to support the transmission and storage of large amounts of HPH data.

- Information Technology Sector: These virtual and distributed functions produce and provide hardware, software, and information technology systems and services, and, in collaboration with the Communications Sector, the Internet.

- Transportation Systems Sector: The Transportation Systems Sector in the FNSB consists of the following modes: 1) Aviation; 2) Highway and Motor Carrier; 3) Mass Transit; 4) Pipeline Systems; 5) Freight Rail; and 6) Postal and Shipping.

- Water and Wastewater Systems Sector: Safe drinking water is a prerequisite for protecting public health and all human activity, and properly treated wastewater is vital for preventing disease and protecting the environment. Ensuring continuity of drinking water and wastewater treatment and service is essential.

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The FNSB maintains a geospatial inventory of critical facilities, including a locally developed criticality ranking system that categorizes infrastructure based on its importance to life safety, continuity of operations, and community function. Facilities are assigned relative criticality rankings and analyzed for both importance and frequency across the Borough.

Higher-ranked critical infrastructure includes facilities essential to community lifelines, such as hospitals, power generation facilities, transportation hubs (including the international airport), water and wastewater systems, and military installations. Lower-ranked but numerous facilities, such as schools, communications infrastructure, and assisted living facilities, also play an important role in community resilience due to their distribution and service populations.[176]

This ranking system supports prioritization of mitigation actions and helps identify infrastructure most at risk during hazard events.

While critical infrastructure data is used in hazard risk mapping and vulnerability analysis, facility-level location details are not presented in this public-facing document to protect sensitive infrastructure information. Infrastructure systems are evaluated for vulnerability to identified hazards in Section 4.6 due to their critical role in emergency response, continuity of operations, and recovery.

4.5.3 Residential Property

Residential property represents a significant portion of the Borough's built environment and is a key component of potential loss exposure across multiple hazard types. Based on the most recent available FNSB tax assessment records, tens of thousands of parcels are classified as residential, including single-family homes, condominiums, mobile homes, multi-family dwellings, and planned community units. These properties collectively represent several billion dollars in total improvement value.

In addition to privately held residential properties, housing units owned and managed by organizations such as the Interior Regional Housing Authority (IRHA) provide critical housing for low-income and vulnerable populations. These units represent an important component of community resilience, as they often serve populations that may be disproportionately affected by hazard events.

[176] Fairbanks North Star Borough GIS Division. Critical Infrastructure Inventory and Ranking Dataset (most recent available).

According to the U.S. Census Bureau, the FNSB contains more than 35,000 housing units, the majority of which are owner- or renter-occupied residential properties.[177] The distribution, density, and value of these residential structures influence the Borough's overall vulnerability to natural hazards, including potential damage, displacement, and recovery challenges following hazard events.

Understanding the location and characteristics of residential properties supports hazard mitigation planning by identifying areas of concentrated exposure and informing strategies to reduce potential losses and protect housing stability within the community.[178]

Residential properties located in hazard-prone areas, such as floodplains or wildland-urban interface zones, may face increased risk of damage, displacement, and long-term recovery challenges.

The vulnerability patterns identified in this section reflect development trends and changes since the 2021 Hazard Mitigation Plan update. As described in Section 3.4, development across the FNSB, City of Fairbanks, and City of North Pole has been generally incremental and concentrated within existing developed areas, with limited new large-scale expansion.

In the unincorporated areas of the FNSB, continued residential development and infrastructure expansion in wildland-urban interface areas and locations affected by permafrost degradation and ground instability contribute to sustained or slightly increased exposure to hazards such as wildfire, ground failure, and infrastructure disruption. Within the Cities of Fairbanks and North Pole, development has primarily occurred as infill and redevelopment within established urban areas, where existing regulatory controls and infrastructure systems moderate increases in vulnerability.

Overall, the risk assessment results indicate that while development patterns have not substantially altered the overall hazard landscape since 2021, incremental development in hazard-prone areas and continued reliance on aging or vulnerable infrastructure remain key drivers of community vulnerability. These conditions reinforce the importance of integrating mitigation into land use planning, capital improvements, infrastructure upgrades, and building code enforcement to manage long-term risk.

[177] U.S. Census Bureau. American Community Survey (ACS) 5-Year Estimates – Housing Units, Fairbanks North Star Borough (most recent available).

[178] FEMA. Local Mitigation Planning Handbook (2013, current guidance) – Exposure and vulnerability assessment.

4.6 Vulnerability and Loss Estimation

This section evaluates the vulnerability of population, infrastructure, and critical facilities to identified hazards and estimates potential losses based on exposure and hazard characteristics. This analysis provides the basis for prioritizing mitigation strategies and actions presented in Chapters 10 and 11. Vulnerability is assessed by examining the location, characteristics, and sensitivity of assets relative to hazard exposure, as outlined in Sections 4.4 and 4.5.

This component of the risk assessment integrates information from previous sections to estimate potential losses resulting from hazard events. Loss estimation considers the exposure and vulnerability of people, residential property, critical infrastructure, and other community assets to a range of hazard scenarios, consistent with FEMA requirements.[179]

Risk scores are based on a combination of hazard probability, magnitude, and exposure of population, critical facilities, and infrastructure, consistent with FEMA risk assessment methodology.

Loss estimates are based on relative risk scoring that integrates hazard probability, exposure, and asset vulnerability, rather than direct dollar-loss modeling.

This assessment evaluates potential impacts from multiple hazard events rather than a single scenario and considers both direct physical damage and broader effects, such as service disruption, displacement, and economic loss.[180]

The planning team conducted spatial analysis of hazard areas in relation to population, infrastructure, and property data to support the evaluation of vulnerability and potential losses. Detailed vulnerability assessments for each hazard are provided in Sections 4.5.1 through 4.5.8.[181] Where available, loss estimates incorporate spatial analysis, local data, and professional judgment to provide a realistic assessment of potential impacts.

The following vulnerability assessments are presented in order of relative hazard risk, consistent with the hazard ranking developed in Section 4.3. They evaluate vulnerability and estimate potential losses associated with each identified hazard, based on exposure of

[179] FEMA. 44 CFR §201.6(c)(2) – Local Mitigation Plan Risk Assessment Requirements.

[180] FEMA. Local Mitigation Planning Handbook (2013, current guidance) – Loss estimation and vulnerability assessment.

[181] FEMA. Local Mitigation Planning Handbook (2013, current guidance) – Loss estimation and vulnerability assessment.

population, infrastructure, and critical facilities. This analysis supports the prioritization of mitigation actions presented in Chapter 11.

4.6.1 Vulnerabilities to Wildfire – Wildland Fire

Impacts associated with wildland fire events include the potential for loss of life; damage to residential, commercial, and critical infrastructure; and disruption to economic and community functions. Wildland fire events may also impact livestock and pets, degrade air quality, damage forest resources, and contaminate water supplies due to post-fire runoff and debris. Wildfire risk within the Borough is influenced by vegetation type, weather conditions, and patterns of development, particularly within the wildland-urban interface (WUI).

Structures located near the WUI, particularly along the outer edges of developed areas, are more vulnerable to wildfire damage. Buildings surrounded by dense vegetation—especially continuous black spruce fuels—and those constructed with combustible materials are at increased risk during wildfire events. Limited defensible space and close proximity to natural fuels further contribute to structural vulnerability.[182]

The FNSB CWPP identifies "Zones of Concern" as areas with elevated wildfire risk. These areas are characterized by heavy fuel loading, commonly consisting of continuous black spruce vegetation interspersed with residential development. Under conducive weather and fire conditions, wildfires in these areas have the potential to spread rapidly and intensify, increasing the risk to life and property.[183] The Zones of Concern are classified into three categories: Extreme, Very High, and High hazard. No areas within the identified Zones of Concern are classified as Moderate or Low risk, indicating consistently elevated wildfire hazard across WUI communities.[184]

Wildfire risk in the Borough is strongly influenced by fuel conditions, weather patterns, topography, and proximity to developed areas. The CWPP identifies 27 WUI communities, all of which are classified as High, Very High, or Extreme hazard based on fire behavior modeling, fuels, and structural vulnerability.

Spatial analysis of wildfire hazard indicates that areas of high fire intensity are distributed throughout the Borough, particularly within WUI areas (Figure 4-6) where vegetation and development overlap. The Wildland-Urban Interface Fire Risk Score Map identifies areas of

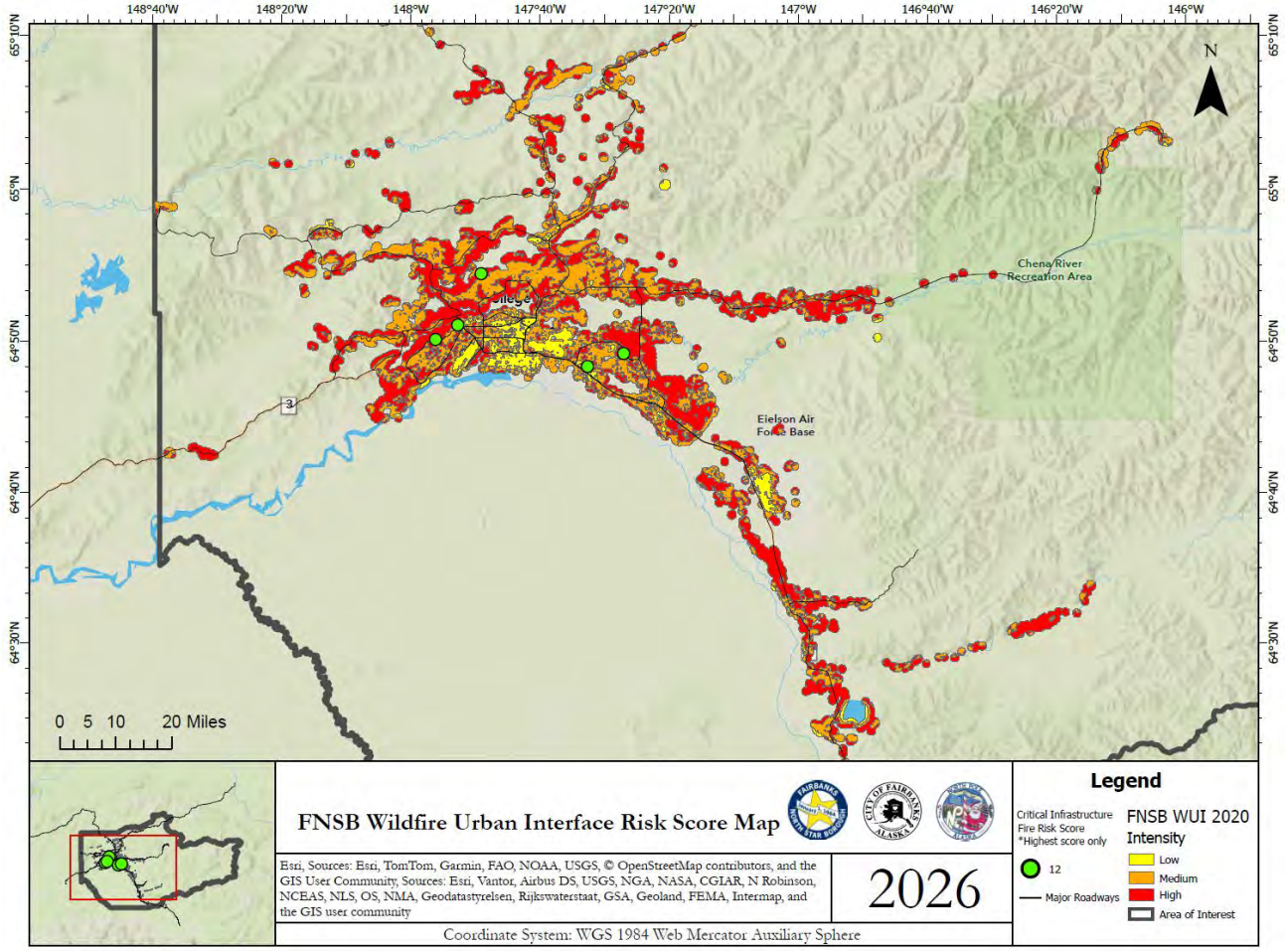
[182] FEMA. Local Mitigation Planning Handbook (2013, current guidance) – Wildfire impacts and vulnerability.

[183] Fairbanks North Star Borough Community Wildfire Protection Plan (CWPP), 2025 (or most recent available).

[184] Fairbanks North Star Borough Community Wildfire Protection Plan (CWPP), 2025 (or most recent available).

high, medium, and low fire intensity, with many developed areas located within or adjacent to higher-risk zones.[185]

Figure 4-6: Map of FNSB Wildfire Urban Interface (WUI) Risk Score



Source: Fairbanks North Star Borough. Wildland-Urban Interface Risk Score Map.

Figure 4-6 illustrates the distribution of wildfire risk across the Borough, including areas within the Wildland-Urban Interface (WUI). This pattern indicates that areas with higher wildfire risk are closely aligned with developed areas in the WUI, increasing the potential for structure loss, evacuation challenges, and impacts to critical infrastructure.

Facility-level Fire Risk Scores indicate that critical infrastructure within the Borough is also highly vulnerable to wildfire impacts. Facilities with the highest risk scores (9–12) include fire water supply systems, electrical substations, fire stations, and communications infrastructure. The highest-risk facilities (score of 12) include water supply infrastructure and

[185] Fairbanks North Star Borough (FNSB) Critical Facilities Fire Risk Dataset (AllScoresWildfire.xls)

electrical substations, which are essential for fire suppression and community functionality. Disruption to these facilities during a wildfire event could significantly reduce emergency response capacity and impact to essential services, increasing overall community vulnerability.[186] These vulnerabilities are further compounded by geographic and access constraints in many parts of the Borough.

Access limitations further increase wildfire vulnerability in many areas of the Borough. Limited ingress and egress routes, extended response times, and constrained firefighting resources in outlying communities may hinder suppression efforts during rapidly advancing wildfire events.

Wildfire smoke represents a significant secondary hazard, with prolonged fire events capable of degrading air quality across the Borough. Reduced visibility and hazardous air conditions can impact public health, aviation operations, and transportation systems, even in areas not directly threatened by active fire.

Older structures and buildings not constructed to withstand wildfire exposure are particularly vulnerable. Structures lacking fire-resistant materials, appropriate defensible space, or modern construction standards face an increased risk of ignition and damage during wildfires.

Overall, wildfire vulnerability in the FNSB is driven by a combination of high-hazard conditions, extensive WUI development, and critical infrastructure located within high-risk areas.

Tables 4-4 through 4-7 summarize the distribution of critical facilities and infrastructure exposed to wildfire risk across the Borough.

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[186] Fairbanks North Star Borough (FNSB) Wildland-Urban Interface Fire Risk Score Map; Fairbanks North Star Borough (FNSB) Critical Facilities Fire Risk Dataset (HighScoresWildfire.xls)

Table 4-4: Wildfire Zones of Concern by Hazard Level

Hazard Level	CWPP Classification (Ignition Component Hazard Rating (ICHR))	General Area Characteristics	Key Risk Drivers
Extreme	ICHR > 75	Northern Annex (e.g., Himalaya Rd, McCall/Darling)	Continuous black spruce, steep slopes, limited access, long response times
Very High	ICHR 61-75	Northern & Eastern/Southern Annex communities	Dense fuels, single access roads, limited water supply
High	ICHR 41-60	Urban Core & Western Annex communities	Structure density, intermix fuels, urban conflagration potential

Source: Fairbanks North Star Borough (FNSB) Community Wildfire Protection Plan (CWPP) hazard ratings and the FNSB Wildland-Urban Interface Fire Risk Score Map.

Table 4-5: Critical Facilities by Fire Risk Category

Fire Risk Score	Relative Risk Level	Example Facility Types	Count (Approx.)
12	Extreme	Water supply, substations	Several
9	Very High	Fire stations, communications, cell towers	Many
8	High	Power infrastructure, hydrants, FAA facilities	Many
6	Moderate-High	Schools, fire stations, post offices	Extensive
4-2	Moderate	Hospitals, utilities, government facilities	Extensive
1-3	Lower	Commercial, offices, banks	Extensive

Source: Fairbanks North Star Borough (FNSB) Critical Facilities Fire Risk Dataset (AllScoresWildfire.xls), including facility types and assigned Fire Risk Scores ranging from 1 (lowest) to 12 (highest).

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Table 4-6: High-**Risk Critical Infrastructure (Score ≥ 9)**

Infrastructure Type	Example	Risk Score
Fire Water Systems	Water tanks, wells	12
Electrical Infrastructure	Substations	12
Fire Stations	Multiple borough stations	9
Communications	Cell towers, GCI facilities	9

Source: Fairbanks North Star Borough (FNSB) Critical Facilities Fire Risk Dataset (AllScoresWildfire.xls); filtered analysis of high-risk facilities with Fire Risk Scores of 9–12.

Table 4-7: Wildfire Hazard Zones (Map Interpretation)

Zone	Description	Implications
High Intensity	Concentrated WUI and fuel-heavy areas	Highest ignition and spread potential
Medium	Transitional WUI areas	Moderate fire behavior risk
Low	Limited fuels or development	Lower ignition potential

Source: Fairbanks North Star Borough (FNSB) Wildland-Urban Interface Fire Risk Score Map; interpreted classification of wildfire hazard intensity zones (High, Medium, Low) based on mapped fire risk scores.

As shown in Tables 4-4 through 4-7, multiple critical facilities and infrastructure assets are located within areas of elevated wildfire risk. These include facilities essential to emergency response and community functioning, some of which are located in zones with limited access, higher fuel loads, and increased potential for fire spread.

These conditions increase the potential for service disruptions, delayed emergency response, and cascading impacts on lifeline systems during wildfire events.

These findings indicate a heightened risk to life safety, property, and continuity of operations, particularly in areas where residential development extends into forested or undeveloped land and where emergency access may be constrained.

In addition to direct fire impacts, wildfire events in the Borough can result in prolonged smoke exposure, reduced air quality, transportation disruptions, and increased demand on public health and emergency services

These vulnerabilities directly inform the wildfire mitigation actions identified in Chapter 11, including fuel reduction, defensible space initiatives, public outreach and education, and improvements to emergency access and response capabilities.

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4.6.2 Vulnerabilities to Wildfire – Urban Conflagration (Structure-to-Structure Fire)

Urban fire events within the FNSB refer to structure-to-structure fire spread occurring within developed areas. Unlike wildland fires, which are driven by vegetation, urban fire events are characterized by ignition and rapid spread between buildings in areas with higher development density.

Factors contributing to urban fire vulnerability include building density, construction materials, limited separation between structures, and the presence of older buildings that may not meet current fire-resistant design standards. In areas with closely spaced structures, fire can spread rapidly from one building to another, increasing the potential for large-scale damage. Critical infrastructure, commercial facilities, and higher-density residential areas within more densely developed portions of the Borough (e.g., downtown Fairbanks and North Pole) may be particularly vulnerable to urban fire events due to the concentration of development and interdependency of services.[187]

Critical infrastructure in developed areas, including fire stations, water supply systems, and communications facilities, may also be vulnerable to urban fires, particularly where these assets are co-located in densely developed areas and rely on interconnected systems for operation.[188]

Limitations in fire suppression capabilities may significantly influence urban fire vulnerability. Water supply constraints, reduced system pressure during extreme cold conditions, and potential impacts to fire water infrastructure can hinder firefighting effectiveness. Additionally, access challenges such as narrow streets, on-street parking, and snow accumulation can delay response and increase the likelihood of structure-to-structure fire spread.[189]

Wind-driven embers from nearby fires can also contribute to structure ignition, creating conditions where wildland fire and urban conflagration risks overlap, particularly in areas adjacent to the wildland-urban interface.

Urban fire events can cause concentrated damage to commercial areas, critical services, and residential structures, particularly in more densely developed areas of the Borough. While

[187] FEMA. Local Mitigation Planning Handbook (2013, current guidance) – Structure fire risk and vulnerability considerations.

[188] Fairbanks North Star Borough (FNSB) Wildland-Urban Interface Fire Risk Score Map.

[189] Fairbanks North Star Borough (FNSB) Wildland-Urban Interface Fire Risk Score Map.

wildland fire risk is generally higher in outlying areas, urban fire risk is more localized but can result in significant impacts due to the concentration of assets and infrastructure.

Urban conflagration risk in the FNSB is driven less by wildland fuels and more by structure density, building characteristics, and limitations in fire suppression access and water supply.

Key factors contributing to urban conflagration vulnerability in the Borough are summarized in Table 4-8.

Table 4-8: Urban Conflagration Vulnerability Factors

Vulnerability Factor	Description	Local Relevance
Structure Density	Closely spaced buildings increase fire spread	Present in the developed areas of Fairbanks and North Pole
Building Materials	Combustible siding/roofing increases ignition potential	Common in residential construction
Defensible Space	Limited separation between structures and fuels	Reduced in dense subdivisions
Access Constraints	Narrow roads, limited ingress/egress	Observed in some WUI and older neighborhoods
Wind Exposure	Wind-driven embers accelerate structure-to-structure fire spread	Interior Alaska wind events contribute to risk
Water Supply	Limited hydrant coverage or flow capacity	Constrains suppression effectiveness in outlying areas

Source: Fairbanks North Star Borough Community Wildfire Protection Plan (CWPP); and adapted from standard urban conflagration and WUI fire behavior vulnerability factors.

As shown in Table 4-8, urban conflagration vulnerability is driven by a combination of structural, environmental, and infrastructure-related factors. High building density, combustible construction materials, limited defensible space, and constrained access routes increase the likelihood of rapid fire spread, while water supply limitations and wind exposure further amplify potential impacts.

These conditions increase the potential for large-scale structural loss, disruption of critical services, and prolonged recovery in densely developed areas.

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4.6.3 Vulnerabilities to Severe Weather

Impacts associated with severe weather events in the FNSB include structural damage, infrastructure disruption, and threats to life safety. Heavy snowfall can result in roof collapse, downed trees and power lines, damage to light aircraft, and sinking small watercraft. Severe winter conditions also increase the risk of injury and death due to vehicle accidents and overexertion during snow removal. Rapid warming following heavy snowfall can contribute to localized flooding and ice jam conditions.

Extreme cold presents additional vulnerabilities. Prolonged low temperatures can lead to hypothermia, frozen pipes, fuel congealing, and mechanical failure in vehicles and equipment. Cold weather can also disrupt transportation systems through ice fog and reduced visibility, particularly in the Fairbanks urban area. Utility systems are at risk of failure due to increased demand and stress on infrastructure, while improper heating practices can result in carbon monoxide poisoning.

Severe winter storms and complex weather events, such as high winds combined with snow or freezing precipitation, further increase the likelihood of cascading impacts. These events can cause widespread power outages, communication failures, and transportation disruptions, particularly along major roadways and in remote areas.

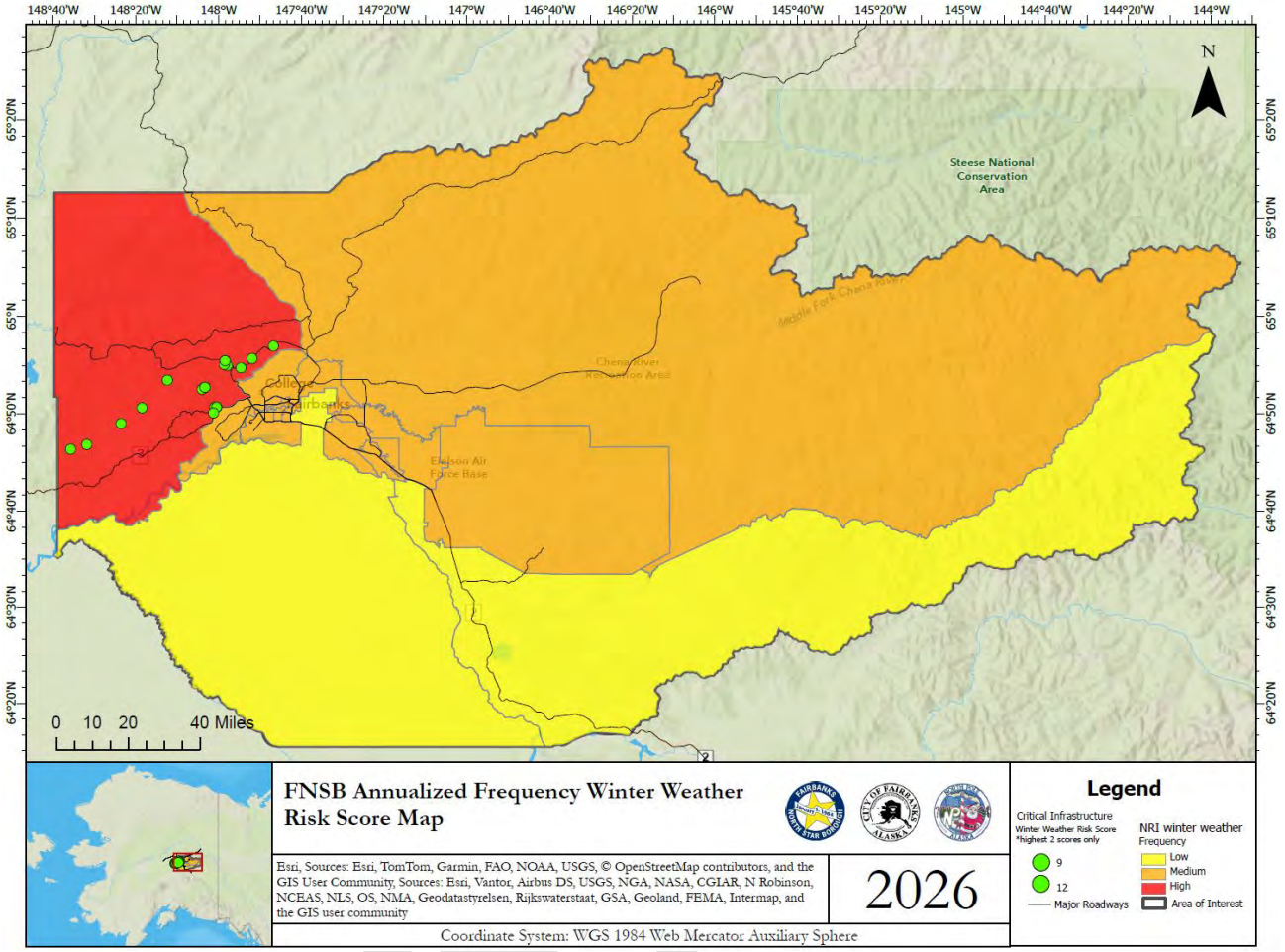
Facility-level data indicate that critical infrastructure across the Borough is vulnerable to severe weather impacts. Fire stations, water supply facilities, electrical substations, and communications infrastructure exhibit some of the highest Winter Weather Risk Scores (9-12). This indicates that exposure to severe weather is widespread across the Borough and not limited to a single geographic area. These facilities are essential for emergency response and community resilience, and their impairment during severe weather can significantly reduce response capacity.[190]

Spatial analysis of winter risk shows that high-frequency severe weather impacts are distributed across the Borough, affecting both developed and remote areas. The Winter Weather Risk Score Map (Figure 4-7) identifies areas of high, medium, and low frequency, with critical infrastructure located within higher-risk zones. This indicates that exposure to severe weather is widespread and not limited to a single geographic area.[191]

[190] Fairbanks North Star Borough (FNSB) Winter Weather Risk Score Map; FNSB Critical Facilities Winter Weather Risk Dataset (AllRiskScoreWinterStorm.xls and HighestRiskScoreWinterStorm.xls).

[191] Fairbanks North Star Borough (FNSB) Winter Weather Risk Score Map; FNSB Critical Facilities Winter Weather Risk Dataset (AllRiskScoreWinterStorm.xls and HighestRiskScoreWinterStorm.xls).

Figure 4-7: Map of FNSB Annualized Frequency Winter Weather Risk Score



Source: Fairbanks North Star Borough. Annualized Frequency Winter Weather Risk Score Map.

Figure 4-7 illustrates the distribution of annualized winter weather risk frequency across the Borough. This pattern indicates that severe weather exposure is widespread, affecting both developed and remote areas, with critical infrastructure located within higher-frequency zones where disruptions are more likely.

Older buildings and structures not designed to withstand heavy snow or high winds are particularly vulnerable. Structures lacking modern construction standards, such as reinforced roofing systems or appropriate load-bearing design, are at increased risk of damage or collapse. Additionally, rural and outlying areas may face greater vulnerability due to limited access, reduced emergency response capabilities, and reliance on fewer critical infrastructure systems.

Overall, the entire Borough is exposed to severe weather hazards; however, vulnerability is influenced by infrastructure resilience, building characteristics, and access to emergency services. Critical facilities with high-risk scores and areas with frequent severe weather

activity represent the most significant concerns for planning and mitigation. Prolonged icy conditions associated with winter rain events may disproportionately affect rural residents, emergency responders, and populations with limited mobility, as well as disrupt access to fuel, food, and essential services.[192]

High-risk critical facilities exposed to severe weather impacts are summarized in Table 4-9.

Table 4-9: High-Risk Critical Facilities **– Severe Weather (Score ≥ 9)**

Facility Name	Facility Type	General Location	Winter Weather Risk Score
Chena Goldstream Fire & Rescue Station 43	Fire Station	Goldstream Rd area	9
Chena Goldstream Fire & Rescue Station 41	Fire Station	Murphy Dome Rd area	9
Ester Volunteer Fire Dept Station 51	Fire Station	Old Nenana Hwy area	9
Chena Goldstream Fire & Rescue Pumphouse	Fire Water	Cordes Dr area	9
Chena Goldstream Fire & Rescue Station 41 Water Tank	Fire Water	Murphy Dome Rd area	9
Ester Volunteer Fire Dept Water Tank (50K Gallons)	Fire Water	Old Nenana Hwy area	9
ETS/Ester Substation	Electrical Operations	Parks Hwy area	9
Post Office	Government Facility	Village Rd area	9
Railroad Bridges (multiple)	Transportation Infrastructure	Borough-wide	9
Cell Towers (multiple-Ester Dome/Goldstream)	Communications	Ester Dome / Goldstream areas	9-12

Source: Fairbanks North Star Borough (FNSB) Critical Facilities Winter Weather Risk Dataset (HighestRiskScoreWinterStorm.xls); facilities with Winter Weather Risk Scores ≥ 9.

[192] Alaska Center for Climate Assessment and Preparedness (ACCAP), *Winter Rain in Interior Alaska: Community Impacts, Effective Responses, and Policy Implications*, Spring 2026.

As shown in Table 4-9, several critical facilities with Winter Weather Risk Scores of 9 or higher are distributed across the Borough, including fire stations, water supply infrastructure, electrical facilities, transportation assets, and communications systems. The exposure of these facilities to severe weather increases the potential for service disruptions, reduced emergency response capability, and impacts to lifeline systems during winter storm events.

These vulnerabilities are particularly significant given the Borough's reliance on these systems for heating, transportation, and emergency response during extended periods of extreme cold and severe weather.

4.6.4 Vulnerabilities to Flooding

Flooding within the FNSB can have significant impacts on life safety, infrastructure, the environment, and economic activity. These impacts are often exacerbated by the Borough's climate, hydrology, and dispersed development patterns.

Typical flood and erosion impacts include:[193]

- Structural and Infrastructure Damage: Damage to structures, roads, bridges, culverts, and other infrastructure may occur due to high-velocity floodwater, ice, and debris transport. Debris accumulation on bridge piers and within culverts can reduce conveyance capacity, increase upstream water levels and causing overtopping, localized flooding, and structural failure.

- Utility and Environmental Impacts: Flooding can cause the release of sewage, fuel, and other hazardous materials due to inundation of wastewater treatment facilities, sewage lagoons, storage tanks, and pipelines. These impacts may be particularly severe in rural or remote areas where systems are decentralized and more difficult to access during flood events.

- Economic and Service Disruptions: Flood events may result in business closures, interruption of government services, and disruption to critical lifelines, including power, communications, potable water, wastewater systems, and transportation networks. Damage to transportation infrastructure can isolate communities and delay emergency responses.

- Erosion and Sedimentation: Flooding can result in soil and debris deposition on riverbanks, embankments, and shorelines. These processes may damage

[193] Fairbanks North Star Borough Mitigation Strategy and Mitigation Action Plan (2026 update); stakeholder input and capability assessment findings.

infrastructure, affect property stability, and alter drainage patterns, increasing long-term vulnerability.

Special Flood Hazard Area

Special Flood Hazard Areas (SFHAs) represent the highest flood risk within the Borough. Properties located within these areas have at least a 1 percent annual chance of flooding, resulting in approximately a 26 percent chance of flooding over the life of a 30-year mortgage.

Structures located within SFHAs are subject to increased exposure to:

- Structural damage
- Repetitive loss
- Utility disruption
- Access limitation during high-water events

Federal regulations require property owners with mortgages from federally regulated or insured lenders to obtain flood insurance within these areas.

Additional Borough Specific Vulnerabilities

Flood vulnerability in the FNSB is further influenced by several local conditions:[194]

- Limited Access and Response Constraints: Flooding can isolate neighborhoods and critical facilities by overtopping or damaging roadways, including damage to bridges and rail infrastructure, which may disrupt regional transportation and supply chains during flood events.[195] Limited redundancy in transportation networks restricts evacuation, emergency response, and recovery operations, particularly in outlying areas.
- Decentralized Infrastructure: Many areas rely on decentralized systems (e.g., on-site water, fuel storage, and wastewater systems), increasing vulnerability to contamination, system failure, and extended service disruption during flood events.

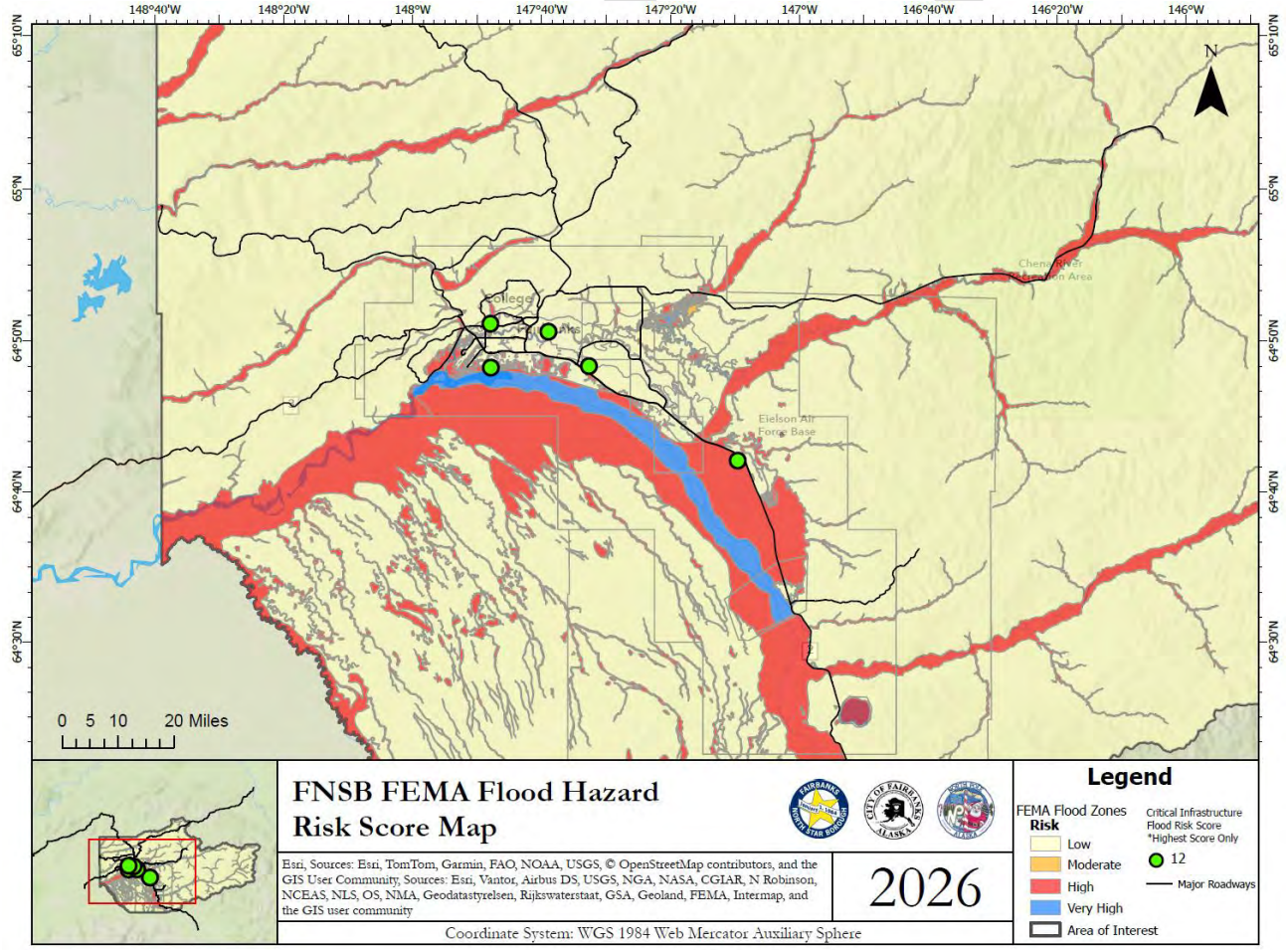
[194] Fairbanks North Star Borough Mitigation Strategy and Mitigation Action Plan (2026 update); stakeholder input and capability assessment findings.

[195] Fairbanks North Star Borough (FNSB) Critical Facilities Flood Risk Dataset (HighestRiskScoreFlood.xls).

- Critical Facility Exposure: Flooding may impact critical facilities essential for emergency response and continuity of operations. Disruption to these facilities can result in cascading impacts across multiple systems, including public safety, utilities, and healthcare. Facility-level Flood Risk Scores indicate that certain critical infrastructure within the Borough—including natural gas facilities, fire water supply systems, and transportation infrastructure such as railroad bridges—are among the most vulnerable to flood impacts, with several facilities assigned the highest flood risk score (12), reflecting both exposure and functional importance.[196]

- Climate and Seasonal Factors: Rapid snowmelt, ice jams, and rain-on-snow events can produce sudden increases in water levels, increasing flood severity and unpredictability.

Figure 4-8: Map of FNSB FEMA Flood Hazard Risk Score



[196] Fairbanks North Star Borough (FNSB) Flood Hazard Map Risk Score Map. FNSB Critical Facilities Flood Risk Dataset (AllRiskScoreFlood.xls and HighestRiskScoreFlood.xls).

Source: Fairbanks North Star Borough. FEMA Flood Hazard Risk Score Map.

Figure 4-8 illustrates the distribution of FEMA flood hazard risk areas across the Borough, including SFHAs and other mapped flood-prone locations. This pattern indicates that flood risk is concentrated along river corridors and in low-lying areas, where development, infrastructure, and critical facilities may be exposed to inundation, erosion, and limited access during flood events. Flood impacts may extend beyond mapped SFHAs due to ice-jam flooding, drainage limitations, and localized conditions, suggesting that mapped risk areas may underestimate actual exposure in some locations.

Overall Vulnerability Summary

Flooding in the FNSB presents a multi-dimensional risk, combining:

- Direct physical damage
- Infrastructure and lifeline disruption
- Environmental contamination
- Access and response limitations

While SFHAs represent the highest-risk locations, flooding impacts may extend beyond mapped areas due to ice processes, drainage limitations, and localized conditions.

4.6.5 Vulnerabilities to Flooding – High Hazard Potential Dams (HHPDs)

High Hazard Potential Dams (HHPDs) are defined by the potential consequences of failure rather than the likelihood of occurrence. Failure of such structures could result in loss of life and significant damage to downstream communities, infrastructure, and critical facilities.

Within and upstream of the Borough, dam-related and flood control infrastructure includes the Chena River Flood Control Project (including Moose Creek Dam and associated levee and flood control structures) and the Fort Knox Mine tailings storage facility.

Risk From HHPDs

Failure or misoperation of these structures, while unlikely, could result in rapid-onset flooding affecting downstream areas, including portions of the developed Fairbanks urban area, transportation corridors, utilities, and critical facilities located along the Chena and Tanana River systems. These impacts could affect all participating jurisdictions depending on location and hydrologic conditions.

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Risk To HHPDs

The dam and flood-control infrastructure may be exposed to the hazards identified in this plan. Flood events may increase hydraulic loading conditions and stress infrastructure. Seismic hazards may affect structural stability. Ground failure, including permafrost degradation and subsidence, may influence foundation conditions. Severe weather, including extreme precipitation and winter rain events, may affect operational performance.

Limitations and Data Gaps

Detailed engineering, structural, and operational data for these facilities are maintained by the U.S. Army Corps of Engineers and Fort Knox Mine and are not fully available within this plan. As a result, this assessment relies on publicly available and stakeholder-provided information. Continued coordination with infrastructure operators and regulatory agencies is necessary to improve understanding of potential impacts and to support future risk assessments.

4.6.6 Vulnerabilities to Earthquake - Ground Motion

Ground shaking from earthquakes poses a significant hazard to the FNSB, potentially impacting life safety, critical infrastructure, and essential services. Alaska is one of the most seismically active regions in the world, and the Borough should expect the full spectrum of earthquake ground motion scenarios, ranging from minor shaking to severe, damaging events.[197]

Ground motion can result in structural damage, infrastructure failure, and disruption of essential services. While all structures are vulnerable to some degree, building performance varies significantly based on construction type, age, and design standards. Wood-frame structures, which are common in the Borough, generally perform better during seismic events than older unreinforced masonry or multi-story steel-and-concrete structures. Buildings constructed after approximately 1980, including many schools and government facilities, were designed in accordance with more stringent seismic standards intended to reduce life-safety impacts during major earthquakes.

Probabilistic Seismic Hazard Analyses (PSHA) developed by the USGS indicate that the entire State of Alaska is subject to moderate-to-high earthquake hazard, as reflected in peak ground acceleration (PGA) values for various recurrence intervals. These analyses demonstrate that damaging ground motion is likely over the long term, even though the timing and magnitude of specific events cannot be predicted. Continued seismic monitoring

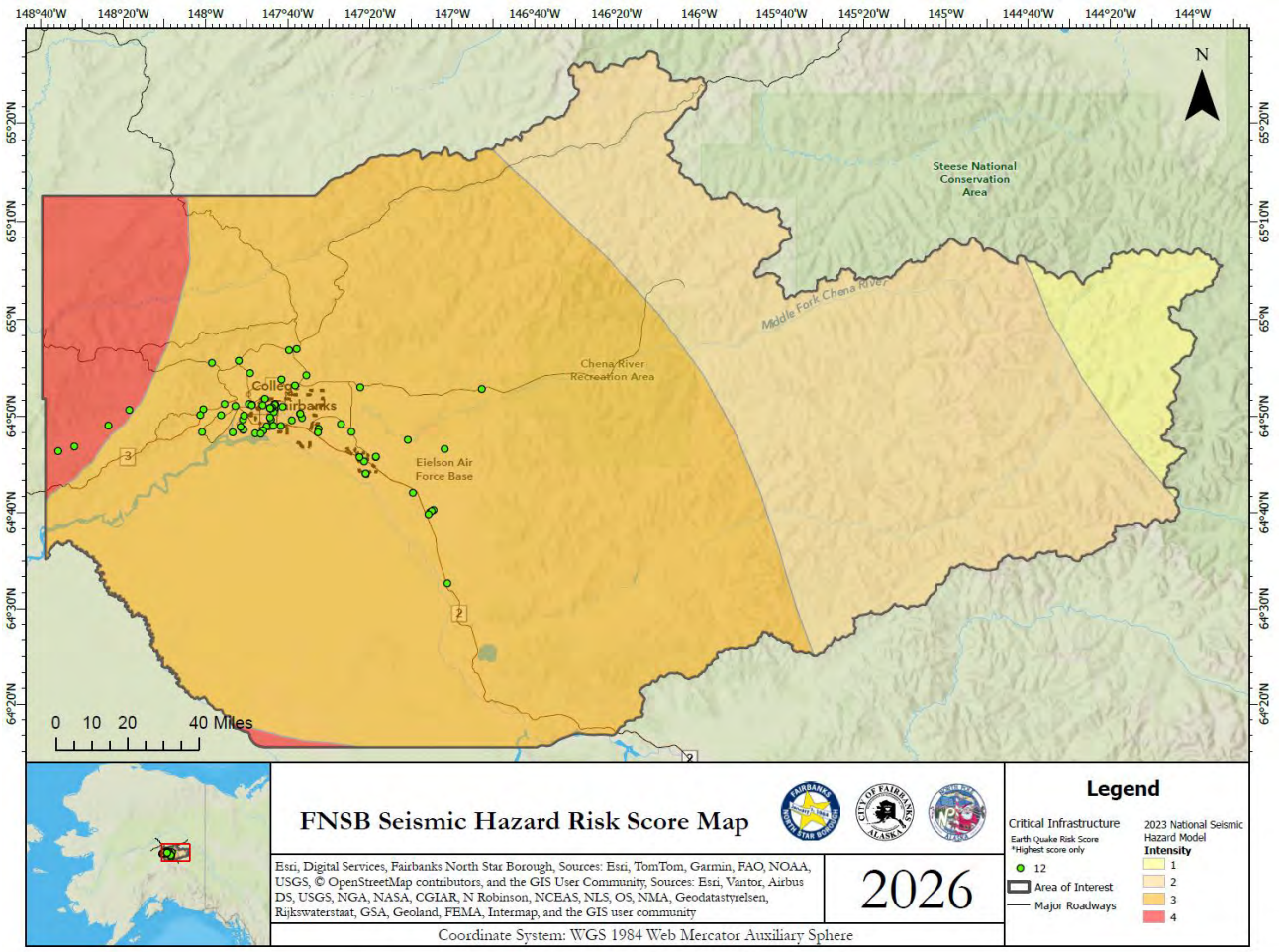
[197] Fairbanks North Star Borough (FNSB) Critical Facilities Earthquake Risk Dataset (AllScoresEarthquake.xls).

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and research by organizations such as the Alaska Earthquake Information Center (AEIC) confirm that seismic activity in Interior Alaska is ongoing and that future earthquakes are expected.

In the FNSB, the impacts of strong ground motion extend beyond structural damage and include significant risks to critical infrastructure and lifeline systems. Facility-Level Earthquake Risk Scores indicate that numerous essential facilities, including power generation plants, substations, natural gas infrastructure, water and wastewater systems, transportation facilities, and emergency response assets, are in the highest risk category (score of 12), reflecting their vulnerability to ground shaking and their importance to community functionality (Figure 4-9).[198]

Figure 4-9: Map of FNSB Seismic Hazard Risk Score



Source: Fairbanks North Star Borough. Seismic Hazard Risk Score Map.

[198] Fairbanks North Star Borough (FNSB) Critical Facilities Earthquake Risk Dataset (HighestRiskScoreEarthquake.xls).

Figure 4-9 illustrates the distribution of seismic hazard risk across the Borough based on facility-level earthquake risk scores. This pattern indicates that critical infrastructure with the highest vulnerability to ground shaking is distributed throughout the Borough, increasing the potential for widespread service disruption and cascading impacts during a major earthquake event.

Damage to these systems can result in cascading impacts, including loss of electrical power, disruption of heating and fuel supply, interruption of communications, and reduced water availability for firefighting and public health needs. Disruption to transportation infrastructure, such as roads, bridges, and rail lines, may further limit emergency response and delay recovery efforts.

Ground motion may also affect critical services such as healthcare, emergency response, and public safety operations. Facilities such as hospitals, emergency operations centers, and fire stations must remain operational during and after an earthquake; however, damage to supporting infrastructure (power, water, communications) can significantly reduce their effectiveness.

Overall, earthquake vulnerability in the FNSB is driven by the combination of regional seismic hazard, structural characteristics of the built environment, and the concentration of critical infrastructure and lifeline systems susceptible to disruption during strong ground-shaking events.

Critical facilities with the highest vulnerability to earthquake ground motion are summarized in Table 4-10.

Table 4-10: High-Risk Critical Facilities – Earthquake Ground Motion (Score = 12)

Facility Type	Examples	Vulnerability Significance
Power Generation	Aurora Energy Plant, North Pole Power Plant	Loss of electricity affects all critical services
Natural Gas Systems	Fairbanks Natural Gas facilities	Fuel disruption impacts heating and energy
Electrical Substations	Multiple substations borough-wide	Grid instability and cascading outages
Water / Wastewater Systems	Water treatment and wastewater plants	Public health and fire suppression impacts
Fire Water Systems	Hydrants, wells, tanks	Reduced firefighting capability

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Transportation Infrastructure	Railroad bridges, airport facilities	Limits evacuation, response, and supply chains
Healthcare Facilities	Fairbanks Memorial Hospital	Direct life safety consequences
Emergency Response / Medivac	Lifemed, Guardian Flights	Reduced emergency response capability

Source: Fairbanks North Star Borough Critical Facilities Earthquake Risk Dataset (HighestRiskScoreEarthquake.xls); facilities with Earthquake Risk Scores = 12.

As shown in Table 4-10, multiple essential infrastructure systems, including power generation, natural gas supply, electrical distribution, water and wastewater systems, transportation infrastructure, healthcare facilities, and emergency response assets, are assigned the highest earthquake risk score (12). Damage to these systems could result in widespread service disruption, significantly affecting life safety, emergency response capability, and overall community resilience during and after a major earthquake.

The high concentration of critical lifeline systems within the highest risk category highlights the potential for cascading impacts across interconnected infrastructure systems

4.6.7 Vulnerabilities to Earthquake - Liquefaction

Liquefaction is the phenomenon in which saturated or partially saturated soil materials lose significant strength and stiffness under the applied stresses of earthquake ground motion. During shaking, soils may behave like viscous fluids, leading to loss of bearing capacity and ground stability. Liquefaction or plastic flow in underlying materials can lead to lateral spreading, settlement, and ground deformation, which may cause significant damage to buildings, infrastructure, and lifeline systems. Liquefaction and lateral spread can occur even in moderate earthquakes and have historically caused substantial damage worldwide.

The planning team previously conducted a spatial analysis using a digital overlay derived from a preliminary liquefaction susceptibility map for the Fairbanks–Nenana area as part of the 2021 plan. This mapping indicates the relative probability of liquefaction occurring in soil deposits if they are water-saturated and subjected to sufficient ground shaking. Areas identified as having higher susceptibility are generally associated with unconsolidated sediments, alluvial deposits, and zones with shallow groundwater conditions.

During the 2026 update, no new liquefaction-specific spatial analysis was conducted; however, the previously identified susceptibility patterns remain applicable and continue to inform the general understanding of liquefaction risk within the Borough.

Additional Borough-Specific Vulnerabilities

Liquefaction vulnerability within the FNSB is influenced by both geologic conditions and the location of critical infrastructure and development in susceptible areas.[199]

- Infrastructure and Structural Impacts: Liquefaction can result in differential settlement of structures, tilting or collapse of buildings, damage to foundations and footings, and ground cracking and surface displacement. Even structures designed to withstand seismic shaking may sustain damage if the underlying soils lose strength.

- Critical Infrastructure Exposure: Facility-Level Earthquake Risk Scores indicate that many critical infrastructure systems within the Borough, including water treatment plants, wastewater systems, electrical substations, natural gas facilities, and fire water systems, are highly vulnerable to earthquake impacts (scores up to 12).[200] These systems are particularly susceptible to liquefaction-related damage due to buried pipelines and utilities, rigid connections between infrastructure components, and dependence on stable ground conditions. Damage to these systems may result in water distribution failures, loss of wastewater treatment capability, fuel and gas line ruptures, and reduced firefighting water availability.

- Lifeline and Cascading Impacts: Liquefaction can significantly affect interconnected lifeline systems. Damage to one system (e.g., power or water) can cascade across others, resulting in loss of electrical power, disruption of communications, interruption of fuel supply, and reduced emergency response capability. Transportation infrastructure, including roads, bridges, and rail lines, may also be impacted by settlement and lateral spreading, limiting access for evacuation, response, and recovery operations.

- Transportation and Access Limitations: Roadways, bridges, and embankments constructed on susceptible soil may experience deformation, cracking, or failure during liquefaction. These impacts can isolate communities, delay emergency response, and restrict the movement of resources during and after an earthquake.

- Local Soil and Groundwater Conditions: Liquefaction susceptibility in the FNSB is closely tied to alluvial soils along river corridors, areas with high groundwater levels,

[199] Fairbanks North Star Borough (FNSB) Critical Facilities Earthquake Risk Dataset (AllScoresEarthquake.xls). Fairbanks North Star Borough (FNSB) Earthquake Hazard Map Risk Score Map.

[200] Fairbanks North Star Borough (FNSB) Critical Facilities Earthquake Risk Dataset (HighestRiskScoreEarthquake.xls).

and unconsolidated sediment deposits. These conditions increase the likelihood that ground shaking will result in loss of soil strength and stability.

Overall Vulnerability Summary

Liquefaction represents a significant secondary hazard associated with earthquake ground motion in the FNSB. While ground shaking directly affects structures, liquefaction can cause ground failure that undermines buildings, infrastructure, and lifeline systems. The combination of susceptible soil conditions, exposure of critical infrastructure, and interdependent utility systems increases the potential for widespread, cascading impacts during a seismic event.

Key infrastructure systems most vulnerable to liquefaction impacts in the Borough are summarized in Table 4-11.

Table 4-11: High-Risk Infrastructure Vulnerable to Liquefaction Effects

Infrastructure Category	Example Facility Types	Liquefaction Impact
Water Systems	Water treatment plants, hydrants	Pipe rupture, loss of pressure
Wastewater Systems	Treatment plants, lift stations	System failure, contamination
Electrical Systems	Substations, power plants	Outages, cascading failures
Natural Gas	Distribution facilities	Line rupture, fire/explosion risk
Fire Water Systems	Wells, tanks, hydrants	Reduced suppression capability
Transportation	Roads, bridges, rail line	Settlement, access disruption
Emergency Services	Fire stations, medivac facilities	Reduced response capability

Source: Fairbanks North Star Borough Critical Facilities Earthquake Risk Dataset; HighestRiskScoreEarthquake.xls (Earthquake Risk Scores = 12).

As shown in Table 4-11, multiple critical infrastructure systems, including water and wastewater systems, electrical infrastructure, natural gas distribution, fire water systems, transportation infrastructure, and emergency services, are highly susceptible to liquefaction-related impacts. These systems are particularly vulnerable due to buried components, rigid connections, and reliance on stable ground conditions.

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Damage to these systems can result in widespread service disruption, including loss of water service, fuel supply interruptions, electrical outages, and reduced emergency response capability, compounding the impacts of earthquake ground shaking. The concentration of multiple lifeline systems within susceptible soil areas increases the potential for cascading failures across interconnected infrastructure networks.

4.6.8 Vulnerabilities to Ground Failure (Landslides, Subsidence, Slope Failure)

Ground failure hazards in the FNSB, including landslides and subsidence, can result in widespread impacts to infrastructure, utilities, and developed areas. These hazards are typically associated with slope instability, soil conditions, groundwater influence, and localized geologic processes.

Potential debris flows and landslides can damage and disrupt transportation corridors, utility systems, and water and wastewater infrastructure, and impact residential, commercial, and public structures near steep slopes, riverbanks, alluvial fans, and natural drainage pathways.

Response and recovery efforts associated with ground failure events may range from minor debris removal to extensive infrastructure reconstruction. Transportation systems are particularly vulnerable, as debris deposition, slope failure, or subsidence can obstruct or damage roadways, requiring immediate clearance for emergency access followed by longer-term repair or replacement.

Utility disruptions caused by ground failure are often localized but can be severe depending on the terrain and the placement of infrastructure. Damage may occur at discrete break points, requiring restoration of electrical, communication, water, wastewater, and fuel pipeline systems. Water and wastewater infrastructure may require treatment or repair to restore functionality and maintain water quality.

Ground failure processes in the Borough are influenced by groundwater conditions, soil type, and localized subsidence or slope movement. In addition, infrastructure and population centers have been screened against soil types identified in the U.S. Department of Agriculture (USDA) Soil Survey of the Fairbanks North Star Area as having engineering properties prone to subsidence.

Additional Borough-Specific Vulnerabilities

- Critical Infrastructure Exposure: Facility-Level Ground Failure Risk Scores indicate that several key infrastructure systems—including power generation facilities, electrical substations, and fire water systems—are among the most vulnerable to ground failure

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impacts, with scores reaching the highest categories (up to 20) (Figure 4-10). Highly vulnerable facilities include power plants (e.g., Aurora Energy facilities), electrical substations (e.g., Chena and Zehnder substations), and fire water supply systems. Damage to these systems can result in cascading impacts on the power supply, emergency response capabilities, and overall community resilience.[201]

- Lifeline and Cascading Impacts: Ground failure can disrupt interconnected lifeline systems, resulting in electrical outages due to substation or line damage, loss of communications infrastructure, disruption of fuel delivery systems, and impacts to water and wastewater services. These disruptions may have cascading effects across multiple sectors, amplifying the overall impact of a ground failure event.

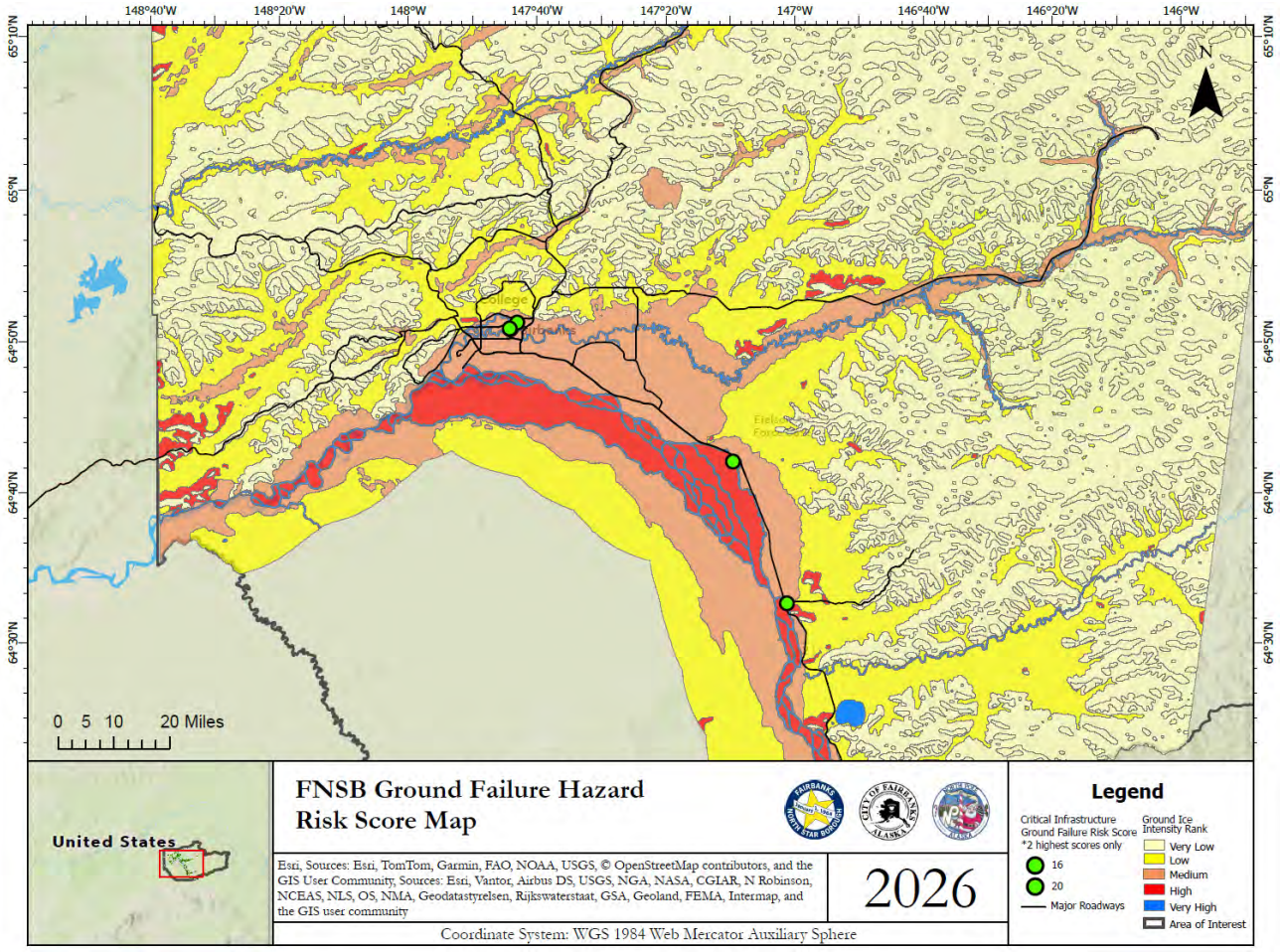
- Transportation and Access Limitations: Ground failure hazards can significantly impair transportation infrastructure. Roadways, bridges, and embankments may be damaged or rendered impassable due to slope instability, settlement, or debris deposition. These impacts can isolate communities and restrict emergency response, evacuation, and recovery operations.

- Local Terrain and Soil Conditions: Ground failure vulnerability in the Borough is influenced by steep slopes and unstable terrain, riverine corridors and embankments, soil types prone to subsidence, and areas with elevated groundwater conditions. These factors increase the likelihood of localized slope failure, settlement, and associated damage to infrastructure.

[201] Fairbanks North Star Borough (FNSB) Critical Facilities Ground Failure Risk Dataset (HighestRiskScoreGroundFailure.xls).

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Figure 4-10: Map of FNSB Ground Failure Hazard Risk Score



Source: Fairbanks North Star Borough. Ground Failure Hazard Risk Score Map.

Figure 4-10 illustrates the distribution of ground failure hazard risk across the Borough, based on facility-level risk scores. This pattern indicates that high-risk infrastructure is distributed across areas with susceptible soil, slope, and groundwater conditions, increasing the potential for localized damage and cascading impacts to lifeline systems.

Overall Vulnerability Summary

Ground failure hazards in the FNSB present a complex risk driven by terrain, soil conditions, and infrastructure placement. While impacts are often localized, they can be severe, particularly where critical infrastructure and transportation systems are affected. The presence of high-risk facilities and interconnected lifeline systems increases the potential for cascading impacts and for extended recovery following ground-failure events.

High-risk facilities most vulnerable to ground failure impacts are summarized in Table 4-12.

Table 4-12: High-Risk Facilities – Ground Failure (Highest Scores)

Facility Type	Example Facilities	Risk Score	Vulnerability
Power Generation	Aurora Energy Plant	20	Loss of power generation capability
Electrical Substations	Chena, Zehnder Substations	20	Grid instability, cascading outages
Fire Water Systems	Wells and hydrant systems	16	Reduced fire suppression capability
Electrical Infrastructure	Johnson Substation	16	Localized outages and service disruption

Source: Fairbanks North Star Borough Ground Failure Risk Dataset; HighestScoresGroundFailure.xls.

As shown in Table 4-12, several critical infrastructure systems, including power generation facilities, electrical substations, fire water systems, and supporting electrical infrastructure, are among the most vulnerable to ground failure impacts, with risk scores reaching the highest categories. Damage to these facilities could result in power outages, reduced fire suppression capability, and cascading impacts across interconnected lifeline systems.

These vulnerabilities highlight the importance of considering ground conditions and terrain stability in infrastructure planning, mitigation, and maintenance efforts.

4.6.9 Vulnerabilities to Ground Failure - Cryosphere (Permafrost Degradation, Thaw Settlement)

Cryosphere hazards in the FNSB are associated with the presence, degradation, and variability of frozen ground, including permafrost and ground ice. The cryosphere represents the portion of the Earth's surface where water exists in frozen form, and in Interior Alaska, these conditions play a significant role in long-term ground stability and infrastructure performance.

The Borough can expect ongoing, evolving cryosphere-related impacts due to climatic variability and warming trends. As permafrost thaws and ground ice melts, soils may lose strength and stability, leading to settlement, subsidence, and ground-surface deformation. These processes can damage structures, roads, utilities, and other infrastructure.

Based on population distribution and development patterns, exposure to cryosphere hazards varies across the Borough. Residents, businesses, and critical facilities may experience a range of impacts, from moderate ground settlement to significant structural damage, depending on local soil conditions, ice content, and groundwater influence.

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Ground failure associated with cryosphere processes can result in the displacement of infrastructure, including the tilting of buildings, the cracking of foundations, and the distortion of roadways and pipelines. These impacts are often gradual but can accelerate under certain conditions, such as increased surface water, altered drainage patterns, or disturbances to insulating vegetation.

The planning team screened infrastructure and population locations against soil types identified in the USDA Natural Resources Conservation Service (NRCS) Soil Survey of the Fairbanks North Star Area that are prone to severe frost action and permafrost-related limitations. These screening results indicate that a substantial portion of developed areas and critical infrastructure may be exposed to cryosphere-related ground instability.[202]

Additional Borough-Specific Vulnerabilities

- Critical Infrastructure Exposure: Facility-Level Ground Failure Risk Scores indicate that numerous critical infrastructure systems—including power generation facilities, substations, water and wastewater systems, and transportation infrastructure—are located in areas susceptible to ground instability processes associated with permafrost degradation and frost action. Highly vulnerable systems include power generation and electrical distribution infrastructure, water and wastewater treatment facilities, and transportation systems, such as roads and airports. Damage to these systems may result in long-term service disruptions and increased maintenance and repair costs.[203]
- Lifeline and Cascading Impacts: Cryosphere-related ground failure can disrupt interconnected lifeline systems over extended timeframes. Gradual settlement and deformation may result in pipeline misalignment and rupture, electrical system instability due to shifting foundations, disruption of communication infrastructure, and reduced reliability of water and wastewater systems. These impacts can accumulate over time, leading to significant operational challenges and increased risk during other hazard events.
- Transportation and Access Limitations: Transportation infrastructure is particularly vulnerable to cryosphere hazards. Thawing permafrost and frost heave can cause road surface deformation and cracking, loss of embankment stability, and airfield and

[202] United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). Soil Survey of the Fairbanks North Star Area, Alaska.

[203] Fairbanks North Star Borough (FNSB) Critical Facilities Ground Failure Risk Dataset (AllScoresGroundFailure.xls)

runway settlement. These conditions may reduce mobility, increase maintenance requirements, and affect emergency response and supply chains.

- Local Soil, Permafrost, and Groundwater Conditions: Cryosphere vulnerability in the Borough is strongly influenced by ice-rich permafrost deposits, seasonal freeze-thaw cycles, soil types prone to frost heave and thaw settlement, and groundwater presence and drainage conditions. These factors contribute to spatial variability in ground stability and increase the likelihood of infrastructure impacts over time.

Overall Vulnerability Summary

Cryosphere hazards constitute a significant and ongoing source of ground-failure risk in the FNSB. Unlike sudden-onset hazards such as landslides, cryosphere-related impacts are often gradual but widespread, affecting infrastructure performance over time. The combination of permafrost degradation, frost action, and underlying soil conditions increases the vulnerability of critical infrastructure, transportation systems, and developed areas, contributing to long-term maintenance challenges and potential cascading impacts across lifeline systems.

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5. Wildfire: Wildland Fire and Urban Conflagration (Structure-to-Structure) Hazard Profile

Wildfire is a recurring and high-consequence hazard in the FNSB, driven by Interior Alaska's fire-adapted boreal forest, seasonal drought conditions, and frequent lightning activity. Large wildfires have repeatedly affected extensive portions of the Borough, producing impacts that extend beyond burned areas to include smoke, degraded air quality, transportation disruptions, utility disruptions, and threats to communities within the WUI. Historical large wildfire activity in Interior Alaska is illustrated in Figure 5-1. This image demonstrates the scale and extent of wildfire activity that can occur across the region under extreme fire weather conditions.

Figure 5-1: Large Wildfire Activity in Interior Alaska, August 2009



Source: NASA MODIS, August 4, 2009

In addition to wildland fire, the Borough is vulnerable to urban conflagration, a related but distinct hazard characterized by structure-to-structure fire spread within developed areas, independent of adjacent wildland fuels. Urban conflagration risk is influenced by building density, construction type, access constraints, water supply limitations, and wind conditions, and may be initiated by wildfire ember intrusion, infrastructure failure, or structural ignition within the built

environment. While wildland fire and urban conflagration may occur simultaneously or sequentially during severe fire weather, they present different exposure patterns, response challenges, and mitigation considerations, and are addressed accordingly in this plan.

5.1 Nature and Location

Wildfire is a natural, recurring process in the boreal forest ecosystem of the FNSB. The Borough lies within Interior Alaska's fire-prone landscape, where wildfire occurrence is strongly influenced by climatic conditions, lightning frequency, vegetation patterns, and the location of development relative to fire-adapted ecosystems.[204]

The Interior Alaska boreal forest is a fire-adapted system that has historically maintained a mosaic of coniferous and deciduous vegetation over millennial time scales. Black spruce is a dominant component of this ecosystem and is adapted to periodic wildfire. While vegetation type and fuel continuity influence fire behavior at local scales, scientific studies of recent extreme fire seasons in Interior Alaska indicate that weather conditions, particularly prolonged drought, high temperatures, low relative humidity, and lightning activity, are the primary drivers of large wildfire events, rather than fuel accumulation or diminished "forest health."[205]

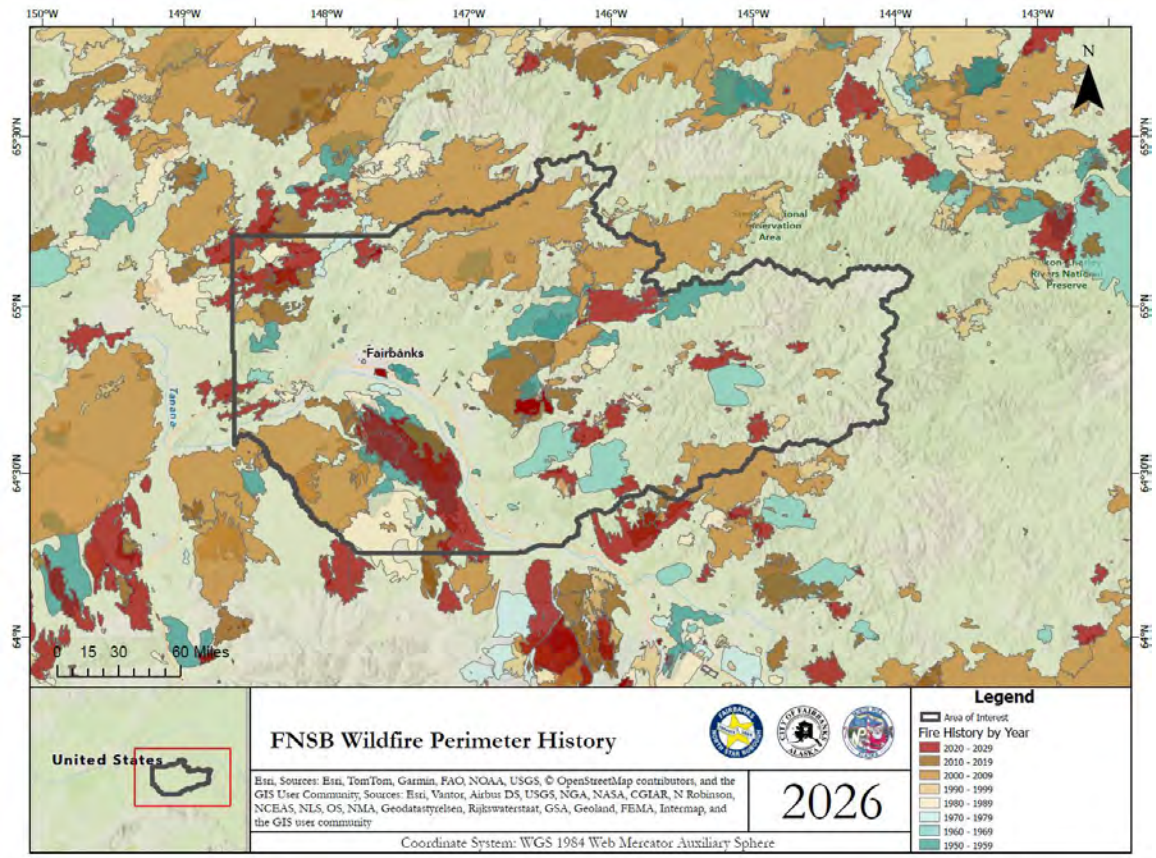
Historic wildfire activity demonstrates that fire has been widespread across the Borough for decades. Fire history mapping (Figure 5-2) shows repeated wildfire occurrence across large portions of the FNSB since at least the mid-20th century, underscoring that wildfire is a persistent regional process rather than an anomalous condition.[206] These patterns indicate that large fires have occurred across a range of vegetation conditions during extreme fire weather.

[204] Fairbanks North Star Borough (FNSB). *Community Wildfire Protection Plan (CWPP)*, 2025 Update.

[205] Barrett, K. et al. (2016). *Fire regimes, extreme fire weather, and vegetation dynamics in Interior Alaska*.

[206] Fairbanks North Star Borough. *Wildfire Perimeter History Map*, compiled fire history datasets.

Figure 5-2: Map of FNSB Fire History



Source: Fairbanks North Star Borough GIS, Fairbanks North Star Borough Department of Emergency Operations

Figure 5-2 illustrates the spatial distribution of historical wildfire activity across the Borough. This pattern indicates that wildfire has occurred repeatedly across a wide geographic area over time, reinforcing that fire is a persistent and natural process within the FNSB rather than an isolated or anomalous event.

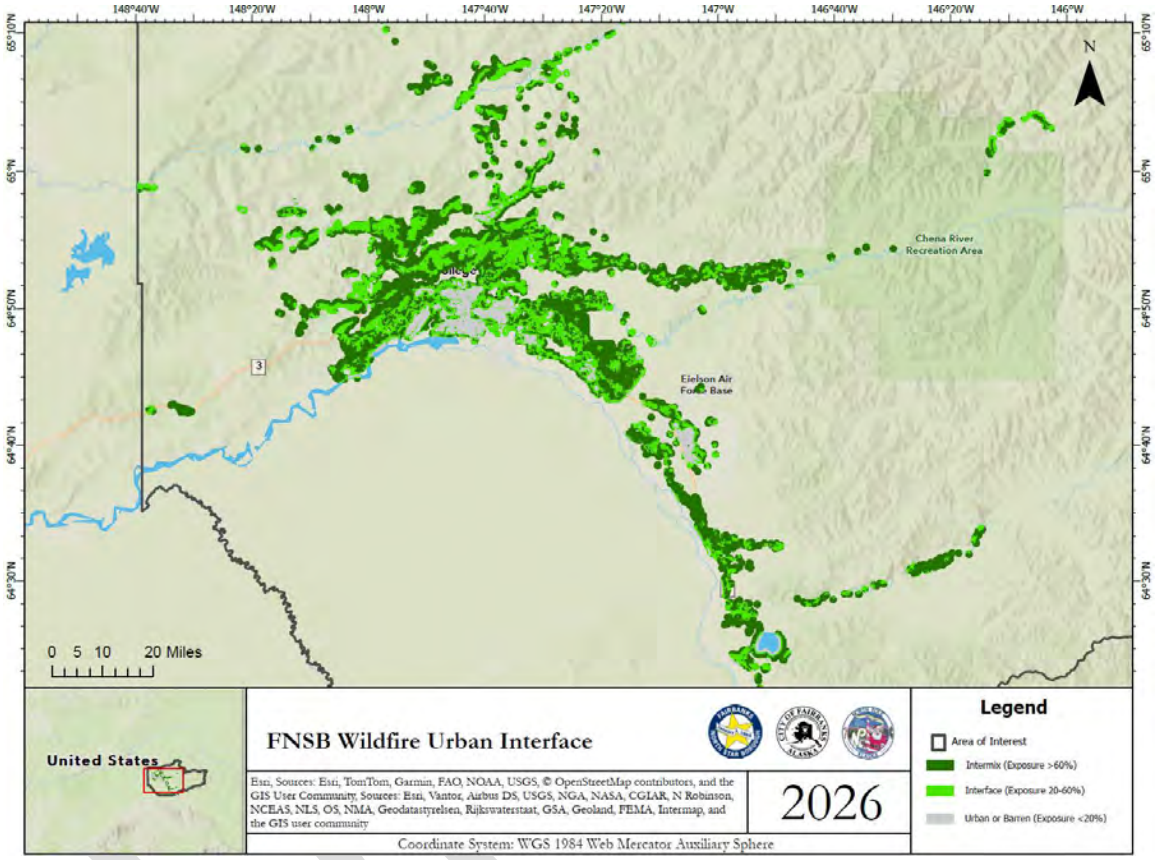
Localized fire suppression efforts near population centers such as Fairbanks have influenced vegetation patterns in some developed areas; however, there is no evidence of widespread increases in stand age or conifer dominance at the Interior Alaska or statewide scale attributable to fire suppression. The relatively short period of more systematic suppression efforts, primarily from the mid-20th century through approximately 1980, represents less than one fire return interval for much of the boreal forest and has had limited influence outside densely populated areas.[207]

Wildfire risk within the Borough is therefore best understood as a function of exposure, particularly where development occurs within fire-prone landscapes.

[207] Barrett, K. et al. (2016). *Fire regimes, extreme fire weather, and vegetation dynamics in Interior Alaska*.

WUI mapping (Figure 5-3) indicates extensive areas of both interface and intermix development throughout the FNSB, where residential structures, critical facilities, and infrastructure are located adjacent to or within vegetated areas capable of supporting wildfire spread.[208] These locations represent the highest potential for life safety impacts, property damage, and evacuation requirements during wildfire events.

Figure 5-3: Map of FNSB Wildfire Urban Interface (WUI)



Source: Fairbanks North Star Borough Wildfire Urban Interface Map

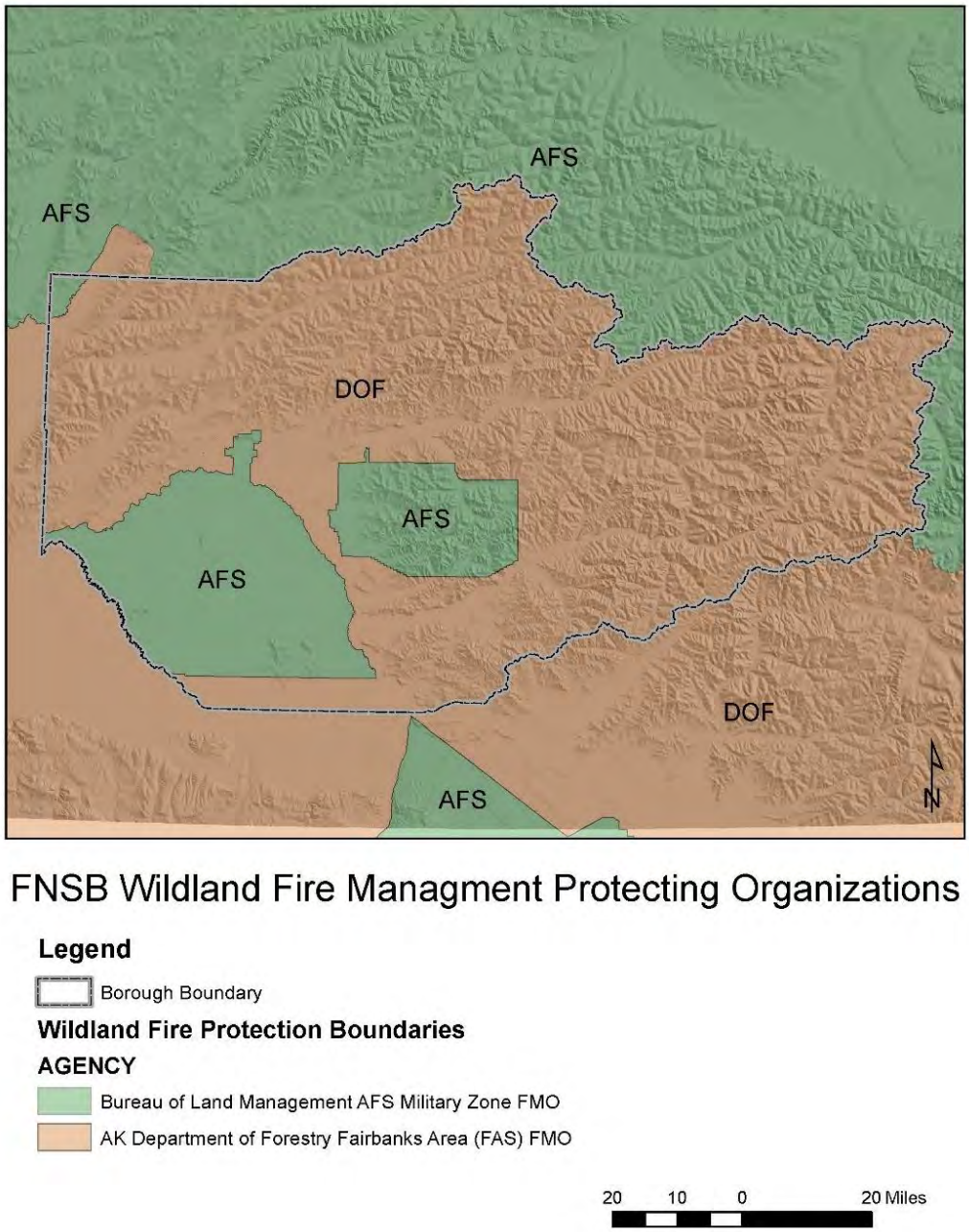
Figure 5-3 illustrates the distribution of the wildland-urban interface (WUI) across the Borough, including both intermix and interface development patterns. This pattern indicates that a substantial portion of residential development and infrastructure is located within fire-prone landscapes, increasing the potential for wildfire exposure and associated impacts to life safety, property, and evacuation routes.

Wildfire management within the FNSB has historically emphasized coordinated interagency response and recognition of fire as a natural ecological process. Wildland fire management across most of the Borough is the responsibility of State

[208] Fairbanks North Star Borough. *Wildland-Urban Interface and Wildfire Hazard Extent Mapping*.

and Federal agencies, with coordination among agencies occurring through established interagency frameworks based in Fairbanks (Figure 5-4). This management context provides the framework for addressing community wildfire risk through local planning efforts, including the 2025 FNSB CWPP.

Figure 5-4: Map of Wildland Fire Management within the FNSB



Source: Fairbanks North Star Borough GIS, Fairbanks North Star Borough Department of Emergency Operations. Retrieved May 29, 2020. Verified current as of May 16, 2026, through Alaska Wildland Fire Information Map Series.

Figure 5-4 illustrates wildland fire management responsibility areas across the Borough, including State, Federal, and local jurisdictional boundaries. This pattern indicates that wildfire management within the FNSB relies on coordinated

interagency response across multiple jurisdictions, which is critical for effective suppression, resource allocation, and incident management.

The CWPP identifies multiple Zones of Concern where hazardous fire behavior is most likely to affect communities. These areas are characterized by the intersection of fire-adapted vegetation, topography, weather exposure, and development patterns, rather than by assumptions of degraded or unhealthy forest conditions.[209] The CWPP emphasizes that mitigation efforts such as fuel treatments, defensible space, and prescribed fire are most effective when applied strategically near communities to reduce wildfire intensity and improve suppression effectiveness, rather than to alter natural forest composition.

In summary, wildfire hazard in the FNSB is driven primarily by extreme fire weather acting on a naturally fire-adapted landscape, with risk concentrated where human development intersects with wildfire-prone environments. The location of communities, infrastructure, and access routes relative to these landscapes is the key determinant of wildfire vulnerability within the Borough.

5.2 Historical Occurrence

Wildland fire and urban conflagration fires have been recurring and have influential hazards in Alaska and within the FNSB for more than a century. Historical records indicate that fire has posed a risk to both natural landscapes and developed areas in Fairbanks since its earliest years.

Early in the community's history, large structural fires demonstrated the vulnerability of the developing urban core. Major fires in 1904 and 1906 burned significant portions of downtown Fairbanks, damaging commercial buildings and infrastructure constructed primarily of wood and other combustible materials. These early urban fire events illustrate the long-standing risk of fire in densely developed areas and highlight the importance of building practices, fire protection capacity, and water supply in limiting its spread.[210]

Wildland fire has also historically affected areas surrounding Fairbanks, including the Birch Hill area and adjacent uplands. Fire history datasets maintained by the

[209] Fairbanks North Star Borough (FNSB). *Community Wildfire Protection Plan (CWPP)*, 2025 Update.

[210] LitSite Alaska – Fairbanks Burns (1906). Alaska Handbook – Great Fairbanks Fire of 1906.

AFS, BLM, and UAF show repeated wildfire occurrence and mapped fire perimeters in the Fairbanks region dating back to the mid-20th century.[211]

These data demonstrate that wildfire is a recurring and natural process in the boreal forest ecosystem surrounding the community. The Birch Hill area, characterized by forested uplands and expanding residential development, remains susceptible to wildfire activity where vegetation, topography, and human presence converge. This pattern reflects ongoing WUI risk within the Borough.

Since 2000, Alaska has experienced 14 FEMA-declared wildfire disasters, reflecting the scale and severity of wildfire impacts statewide. Two of these declared wildfire disasters directly affected the FNSB: the Moose Mountain Fire (2011) and the Boundary Fire (2004).[212]

Within the Borough, wildfire history shows that both large, remote fires and smaller fires near communities can have significant impacts. The Moose Mountain Fire ignited on May 20, 2011, near the community of Goldstream and burned approximately 940 acres. Although limited in size, the fire's proximity to residences required prolonged suppression efforts, and it was not declared extinguished until early September. Suppression costs exceeded $5 million, illustrating how wildfires near populated areas can lead to disproportionately high response costs.[213]

During the same fire season, the Hastings Fire (2011) burned approximately 54,217 acres in the Fairbanks area and prompted evacuation advisories for nearby subdivisions. This human-caused fire required extensive suppression resources and resulted in estimated costs exceeding $18 million.[214] Other notable wildfires affecting the Borough include the Stuart Creek 2 Fire (2013), which burned more than 87,000 acres and forced the evacuation of hundreds of residents and animals, and the Shovel Creek Fire, which required evacuations and sheltering for multiple communities and became a nationally prioritized incident.[215]

[211] Alaska Large Fire Database / AFS fire perimeter datasets. UAF SNAP wildfire history mapping tools.

[212] Fairbanks North Star Borough. *Past Disaster and Hazard Event Records*, including wildfire incident summaries and FEMA disaster declarations.

[213] Fairbanks North Star Borough. *Past Disaster and Hazard Event Records*, including wildfire incident summaries and FEMA disaster declarations.

[214] Fairbanks North Star Borough. *Past Disaster and Hazard Event Records*, including wildfire incident summaries and FEMA disaster declarations.

[215] Fairbanks North Star Borough. *Past Disaster and Hazard Event Records*, including wildfire incident summaries and FEMA disaster declarations.

The Boundary Fire (2004) remains one of the most significant wildfire events in Alaska's recorded history. Burning during a year characterized by extreme heat, prolonged drought, and record lightning activity, the Boundary Fire ultimately exceeded 500,000 acres, with the larger Alaska–Canada Border fires collectively burning more than one million acres statewide. Scientific assessments of this and other extreme fire years indicate that weather conditions, rather than fuel accumulation alone, were the dominant drivers of fire extent and severity.[216]

In addition to direct fire impacts, wildfire has repeatedly affected the FNSB through smoke and air quality degradation. Wildfire smoke has resulted in extended periods of unhealthy air quality, particularly in densely populated areas of the Borough. Smoke exposure poses heightened risks to vulnerable populations, including older adults, children, and individuals with respiratory or cardiovascular conditions. Wildfire smoke consists of a complex mixture of gases and fine particulate matter, including PM2.5, which can penetrate deep into the lungs and enter the bloodstream, increasing the risk of serious health effects.[217]

Wildfire smoke has also disrupted transportation and critical infrastructure, including roadway travel, aviation operations at Fairbanks International Airport and military installations, and rail service along the Alaska Railroad corridor. During severe smoke events, reduced visibility and operational constraints have resulted in delays, closures, and regional economic impacts, as illustrated in Figure 5-5.[218]

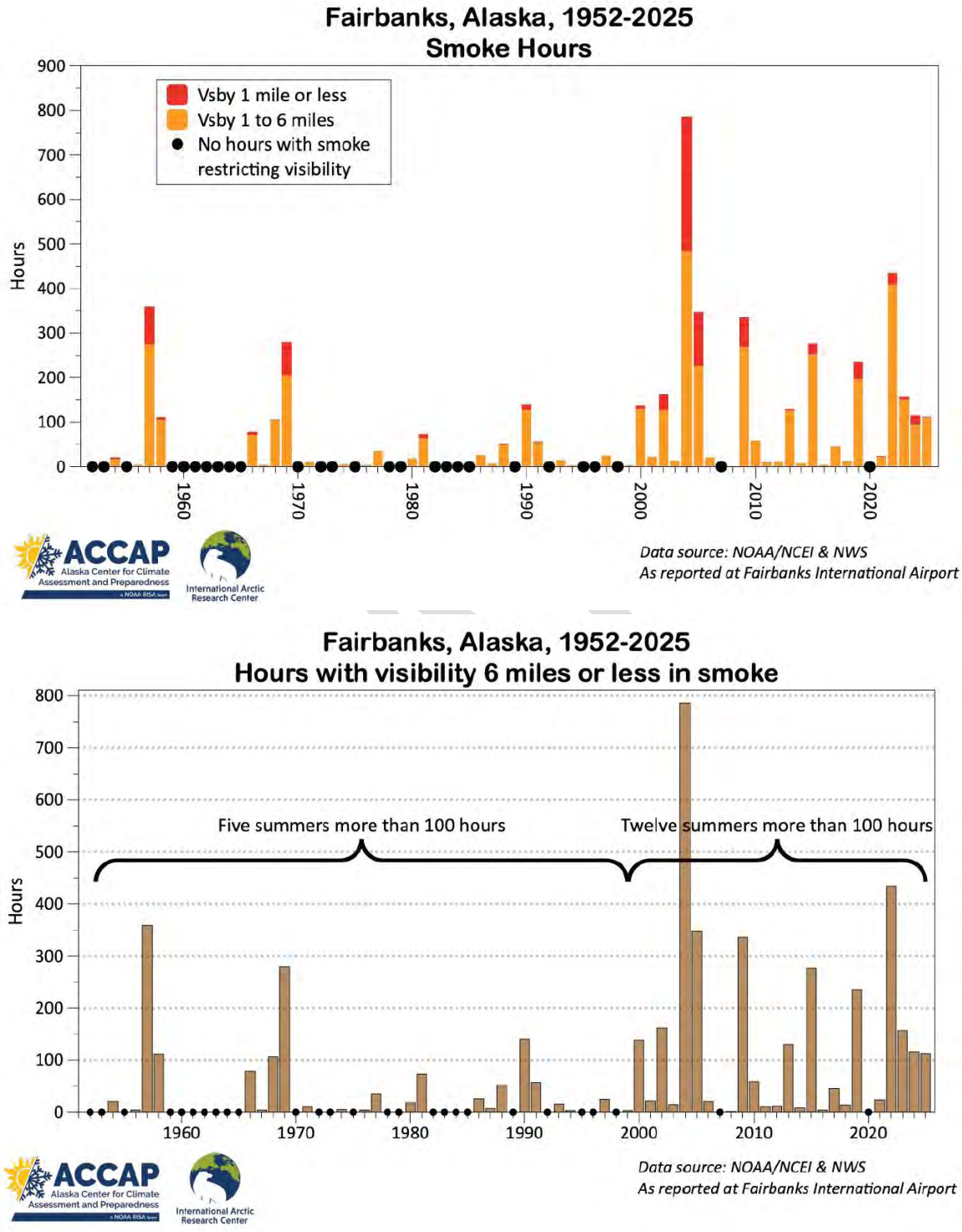
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[216] Grabinski, Z. & McFarland, H.R. *Alaska's Changing Wildfire Environment 2.0* (2025). Alaska Fire Science Consortium, International Arctic Research Center, University of Alaska Fairbanks.

[217] Alaska Department of Environmental Conservation; U.S. Environmental Protection Agency. *Wildfire Smoke and PM2.5 Health Impacts*.

[218] Fairbanks North Star Borough. *Past Disaster and Hazard Event Records*, including wildfire incident summaries and FEMA disaster declarations.

Figure 5-5: Wildfire Smoke in Fairbanks.



Source: Alaska Center for Climate Assessment and Preparedness / University of Alaska Fairbanks.

Figure 5-5 illustrates wildfire smoke conditions in the Fairbanks area during a significant smoke event. These images demonstrate the extent to which wildfire

smoke can reduce visibility, degrade air quality, and disrupt transportation and daily activities across the Borough.

On June 1, 2020, an intense smoke-driven vortex event, commonly referred to as a "smokeknado," was observed south of Fairbanks during a period of heavy wildfire smoke and unstable atmospheric conditions (Figure 5-6). While not a true tornado, the event produced rapidly rotating smoke columns and near-zero visibility, further illustrating how severe smoke conditions can create hazardous travel environments and disrupt transportation and aviation operations even in the absence of precipitation or high winds.[219]

Figure 5-6**: Smoke Vortex ("Smokenado") Observed South of** Fairbanks, June 1, 2020.



Source: National Weather Service Fairbanks Forecast Office; public observation imagery.

Figure 5-6 illustrates a smoke vortex ("smokenado") observed during a wildfire smoke event near Fairbanks. This phenomenon demonstrates how extreme fire weather and atmospheric instability can create hazardous conditions that further

[219] National Weather Service (NWS), Fairbanks Forecast Office. June 1, 2020 smoke vortex event summary and wildfire smoke impact statements. Fairbanks North Star Borough; Alaska Department of Transportation & Public Facilities. Transportation and visibility impacts associated with wildfire smoke events.

reduce visibility and increase risks to transportation and emergency response operations.

Historical records further indicate that large fires influenced the FNSB landscape prior to modern fire management. Extensive railroad-related fires in the Tanana Flats during the early 1940s, burning more than 700,000 acres, helped shape the forest mosaic south of Fairbanks that persists today. These events highlight that large-scale wildfire is not a recent phenomenon but a long-standing component of the Interior Alaska fire regime.[220]

Recent research confirms that Alaska's wildfire environment is continuing to evolve. Studies conducted by the Alaska Fire Science Consortium indicate that Interior Alaska has experienced multiple "large fire years" since 2000, defined as years in which more than one percent of the landscape burned. These patterns are closely associated with increasing fire weather severity and drought conditions, reinforcing wildfire as a persistent and recurring hazard for the FNSB.[221]

5.3 Extent

Extent describes the severity or magnitude of a hazard, including the intensity, geographic scale, and potential level of impact on the planning area. The extent of wildfires within the FNSB varies by location, seasonal conditions, and event characteristics.

Wildfire extent is defined by the size, intensity, and spread of fire across vegetated areas. Extent may range from small, localized fires to large-scale regional events affecting thousands of acres and threatening wildland-urban interface areas. Fire behavior, fuel conditions, weather, and topography influence the severity and spread of wildfire within the planning area.

In the FNSB, wildfire extent can range from small, localized fires affecting tens to hundreds of acres to large, landscape-scale events exceeding tens of thousands to several hundred thousand acres under extreme fire weather conditions. Historical events such as the Boundary Fire and other large Interior Alaska fires demonstrate the potential for wildfire to affect extensive portions of the Borough and surrounding region during severe fire seasons. Under these conditions, wildfire

[220] Alaska Fire Science Consortium. *Research Briefs on Historical Fire Regimes in Interior Alaska* (2020–2021).

[221] Grabinski, Z. & McFarland, H.R. *Alaska's Changing Wildfire Environment 2.0* (2025). Alaska Fire Science Consortium, International Arctic Research Center, University of Alaska Fairbanks.

intensity may include rapid spread rates, crown fire behavior in conifer-dominated stands, and long-range ember transport that ignites spot fires well ahead of the main fire front, increasing the potential for structure loss and urban conflagration in exposed areas.

Extent is further illustrated through hazard mapping and exposure analysis presented in Chapter 4.

5.4 Possible Impacts from Future Events

The entire FNSB is vulnerable to wildland fire and urban conflagration hazards, although risk varies based on location, land use, and development patterns. Communities, populations, and facilities located within or adjacent to the wildland-urban interface are at elevated risk from wildland fire, while developed areas with higher structure density are vulnerable to urban conflagration, defined as structure-to-structure fire spread within built environments. Factors influencing the severity of future fire impacts include population distribution, structural density and design, transportation network configuration, water supply availability, and the infrastructure required to support residential, commercial, industrial, and institutional land uses.[222]

Under extreme fire weather, particularly when large wildfires coincide with strong wind events, communities within the WUI may face rapidly spreading fire behavior that exceeds initial attack and suppression capabilities, increasing the risk of urban conflagration and large-scale evacuation.

During future wildfire events, particularly those occurring under extreme fire weather conditions, the Borough may experience significant life-safety impacts that require emergency medical services, evacuation, temporary sheltering, and the provision of food, water, and essential supplies. Dense smoke and wind-driven fire behavior may further complicate evacuation by reducing visibility, limiting roadway capacity, and constraining responder access during time-critical incidents. Prolonged wildfire smoke may degrade air quality over extended periods, increasing the risk of adverse health effects, especially for vulnerable populations. Roadway and air transportation routes through the wildland-urban interface may

[222] Fairbanks North Star Borough Community Wildfire Protection Plan (CWPP), 2025 Update.

be closed or restricted for extended durations, limiting emergency response, commerce, and the delivery of goods and services.[223]

Urban conflagration events present a different but equally serious set of future impacts. In densely developed areas, fire may spread rapidly between structures due to limited separation distances, combustible construction materials, wind-driven ember exposure, constrained access routes, and reduced firefighting water availability. Urban conflagration can result in concentrated property loss, resident displacement, and disruption of essential services, even in the absence of a large surrounding wildland fire.[224]

Wildland fires and urban conflagrations both have the potential to damage or disrupt large-scale, interconnected infrastructure systems. Impacts may include interruptions to the TAPS, regional fuel production and refining, electrical transmission and distribution systems, rail transportation of goods and passengers, highway delivery of natural gas, and air transport of freight and travelers. Disruption to any one of these systems may result in cascading impacts across others, amplifying economic and service disruptions throughout the Borough and the state.[225]

Although Fairbanks' municipal water supply is sourced from wells within the metropolitan area, fire-related power outages or transportation disruptions could affect water availability and treatment. Rural residents who rely on water transported or delivered may face acute shortages if transportation corridors are closed. In both wildland fire and urban conflagration scenarios, limited access to water supplies may also reduce firefighting capability and increase the potential for fire spread.[226]

Finally, fire impacts on national defense assets could be significant due to the proximity of Fort Wainwright and Eielson AFB. Wildfire smoke, access limitations, power disruptions, and urban conflagration impacts within developed areas may

[223] Fairbanks North Star Borough Community Wildfire Protection Plan (CWPP), 2025 Update. Alaska Department of Environmental Conservation (ADEC); U.S. Environmental Protection Agency (EPA). Wildfire Smoke, PM2.5, and Public Health Impacts.

[224] Fairbanks North Star Borough Community Wildfire Protection Plan (CWPP), 2025 Update.

[225] Federal Emergency Management Agency (FEMA). Lifelines and Infrastructure Interdependency and Cascading Impacts Guidance.

[226] Fairbanks North Star Borough Community Wildfire Protection Plan (CWPP), 2025 Update.

affect operational readiness, training activities, housing areas, and emergency response capabilities associated with these installations.[227]

Wildland fire and urban conflagration events may also cause cascading supply chain disruptions by damaging transportation corridors, restricting air and rail access, and disrupting fuel and freight movement into Interior Alaska, as described in Annex A: Supply Chain Disruptions Hazard Profile.[228]

5.5 Recurrence Probability of Future Events

Wildland fire and urban conflagration hazards in the FNSB are considered highly likely to occur. Wildland fire is a recurring annual hazard in Interior Alaska, with fire seasons typically occurring between May and September, and variability driven by weather conditions, fuel moisture, and ignition sources.

Historical fire occurrence data indicate that small wildland fires occur frequently each year, whereas large, high-intensity wildfire events occur periodically during extended drought, high temperatures, and low humidity. Lightning is a primary natural ignition source, while human-caused ignitions also contribute to fire occurrence within the Borough.

Urban conflagration events are less frequent but remain a low- to moderate-probability hazard with potentially high consequences, particularly in areas with high structural density, limited defensible space, or constrained emergency access. The likelihood of structure-to-structure fire spread increases under extreme fire weather conditions, limited water supply, or delayed suppression.

The probability of future wildfire events is expected to remain high and may increase over time due to:

- Warmer temperatures and longer fire seasons
- Increased frequency of extreme weather conditions
- Changes in vegetation and fuel conditions
- Continued development within the wildland-urban interface

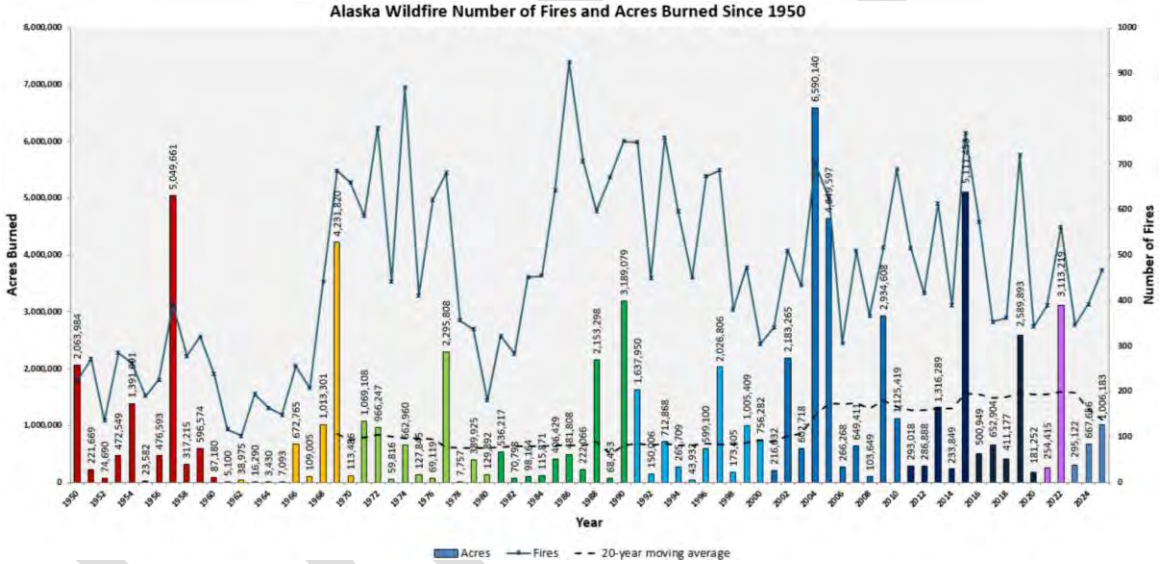
[227] Fairbanks North Star Borough Community Wildfire Protection Plan (CWPP), 2025 Update.

[228] Fairbanks North Star Borough (FNSB). Annex A: Supply Chain Disruptions Hazard Profile, 2026 MJ-HMP Update.

Overall, wildland fire represents one of the most frequent and significant natural hazards affecting the Borough, while urban conflagration represents a lower-frequency but high-impact risk.

Scientific observations and climate records indicate that Alaska's wildfire risk has increased in recent decades. In Interior Alaska, a typical summer today closely resembles what were considered the warmest summers prior to the 1970s. Since 1925, six of the ten warmest summers (June–August) in Alaska's primary wildfire regions have occurred within the past 20 years, contributing to longer fire seasons, increased fire weather severity, and higher probabilities of large wildfire events, as illustrated in Figure 5-7.[229]

Figure 5-7: Alaska Wildfire Number of Fires and Acres Burned from 1950 to 2025.



Source: Alaska Climate Research Center, 2025 Alaska Annual Climate Report (Microsoft Word - 2025_AnnualReport_Draft-v10.docx). Alaska Fire History Chart available at https://fire.ak.blm.gov/predsvcs/intel.php.

As development continues to expand into wildland areas, the probability of wildfire impacts to people and property increases. The WUI concentrates exposure by placing residential neighborhoods, infrastructure, and critical facilities within fire-prone landscapes. In addition, developed areas with higher structural density face a higher probability of urban conflagration, in which structure-to-structure fire spread may occur during extreme wind events, prolonged dry conditions, or after ember exposure from nearby wildland fires.

[229] Grabinski, Z. & McFarland, H.R. Alaska's Changing Wildfire Environment 2.0 (2025). Alaska Fire Science Consortium, International Arctic Research Center, University of Alaska Fairbanks. www.frames.gov/afsc/acwe

Fire ignition sources also influence future probability. While the majority of wildfire ignitions in Alaska are human-caused, lightning-caused fires account for approximately 90 percent of the total area burned statewide, largely because they frequently occur in remote areas where detection and initial attack are delayed, and suppression is limited by access and management objectives. Human-caused fires, by contrast, tend to occur closer to populated areas, are often detected more quickly, and typically burn fewer acres per event, though they may pose a higher risk of structural damage and economic loss due to their proximity to development.[230]

Urban conflagration probability is driven by a different but related set of factors, including structural density, building materials, limited separation distances, constrained access for firefighting equipment, and availability of firefighting water supplies. Periods of extreme heat, drought, and wind increase the likelihood that a single structural ignition could spread rapidly through developed areas, even in the absence of a large surrounding wildland fire.[231]

Beyond the immediate occurrence of fire, wildfire probability is also linked to secondary and cascading effects that influence future risk. Wildfire smoke regularly affects large portions of the Borough, degrading air quality, limiting visibility, and constraining aviation operations that support both suppression and community access. High-severity fires can remove surface organic layers, contributing to long-term permafrost thaw, altered hydrology, and changes in vegetation that may influence future fire behavior.[232]

The FNSB has responded to this persistent probability of wildfire through coordinated planning and mitigation efforts. Beginning in 2005, the Borough partnered with the Alaska DFFP and other state and federal agencies to develop wildfire risk mapping and the CWPP. The 2025 CWPP identifies wildfire risk across the Borough using an exposure-based framework that incorporates hazardous fuels, ignition risk, values at risk, and suppression difficulty, and recognizes wildfire

[230] Alaska Fire Science Consortium; Alaska Division of Forestry & Fire Protection. Wildfire ignition and burned-area statistics for Interior Alaska.

[231] Fairbanks North Star Borough (FNSB). Community Wildfire Protection Plan (CWPP), 2025 Update.

[232] Grabinski, Z. & McFarland, H.R. Alaska's Changing Wildfire Environment 2.0 (2025). Alaska Fire Science Consortium, International Arctic Research Center, University of Alaska Fairbanks. www.frames.gov/afsc/acwe

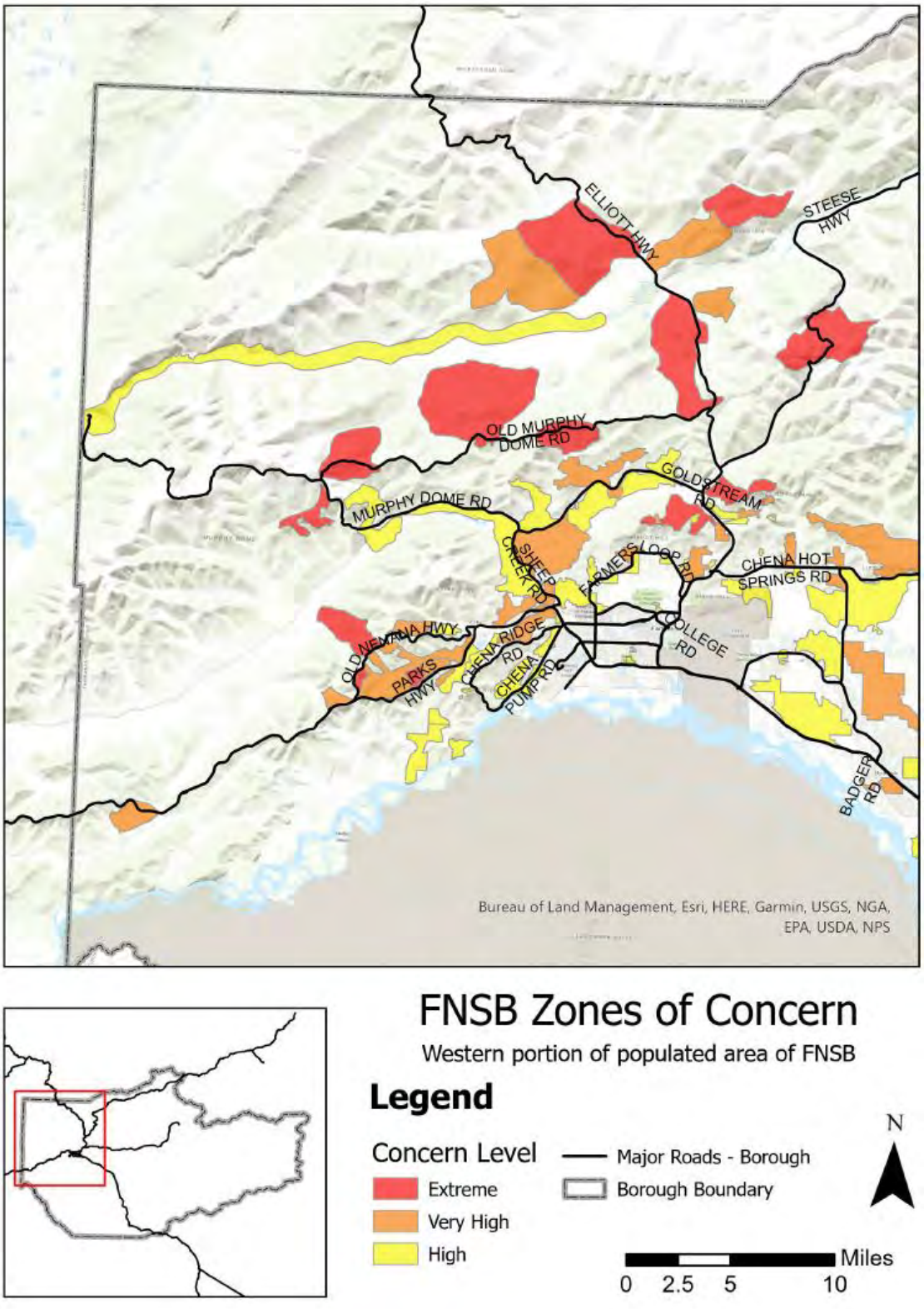
and urban conflagration as ongoing, long-term hazards requiring sustained management and preparedness.[233]

Earlier CWPP technical modeling components are summarized in this plan's narrative; final Zones of Concern mapping is retained as the primary spatial representation of wildfire risk (Figures 5-8 and 5-9).

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[233] Fairbanks North Star Borough (FNSB). Community Wildfire Protection Plan (CWPP), 2025 Update.

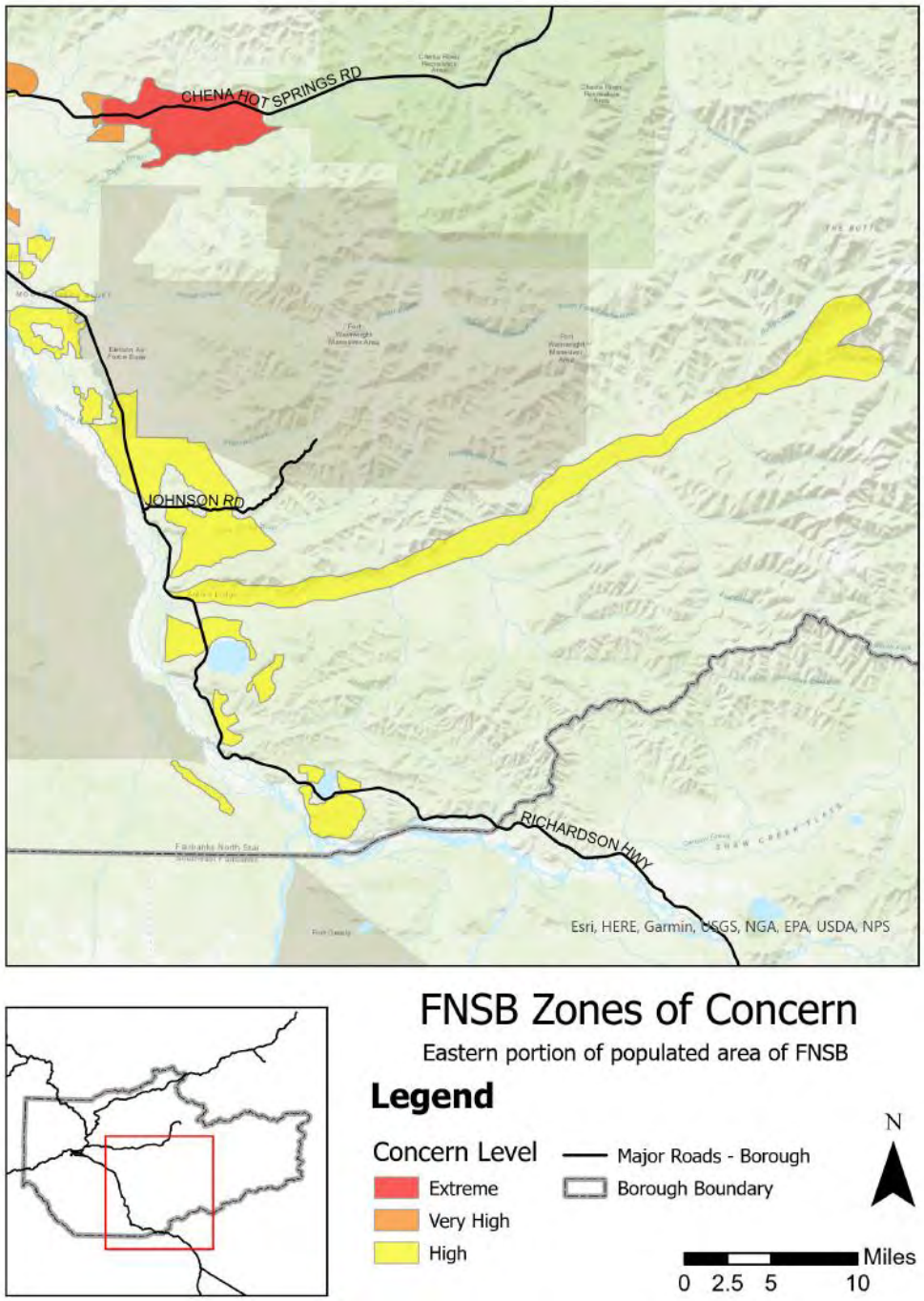
Figure 5-8: Map of FNSB Wildland Fire Zones of Concern – Western Population



Source: Fairbanks North Star Borough GIS, Fairbanks North Star Borough Department of Emergency Operations, Retrieved 6/2/2026.

Figure 5-8 illustrates the distribution of CWPP Wildland Fire Zones of Concern in the western portion of the Borough, including areas of High, Very High, and Extreme hazard. This pattern indicates the concentration of wildfire exposure in areas with significant overlap between hazardous fuels, development, and limited access, particularly in communities located within the western population centers.

Figure 5-9: Map of FNSB Wildland Fire Zones of Concern – Eastern Population



Source: Fairbanks North Star Borough GIS, Fairbanks North Star Borough Department of Emergency Operations, Retrieved 6/2/2026.

Figure 5-9 illustrates the distribution of CWPP Wildland Fire Zones of Concern in the eastern portion of the Borough. This pattern indicates that wildfire risk extends across multiple regions of the Borough, reinforcing that high-hazard conditions are not isolated but distributed across developed and developing areas. Together, Figures 5-8 and 5-9 demonstrate that wildfire hazard is both widespread and closely aligned with areas of existing and future development.

5.6 Wildfire Hazard Actions

5.6.1 Wildfire and Urban Conflagration - Current Mitigation Actions and Authorities

The CWPP remains the primary local framework for identifying wildfire risk, prioritizing mitigation actions, and coordinating interagency and community-level wildfire preparedness in the Borough.

Wildfire and urban conflagration mitigation in the FNSB occurs within a rapidly changing climate context in which fire weather has become a primary driver of increasing fire risk. Observed trends show that summer temperatures across Interior Alaska have increased since approximately 1970, with recent summers resembling the warmest conditions previously observed prior to that period. Since 1925, six of the ten warmest summers (June–August) in Alaska's primary wildfire regions have occurred within the past 20 years, contributing to longer fire seasons and more frequent extreme fire weather conditions.[234]

Climate-driven changes in seasonal timing further amplify wildfire and urban conflagration risk. The snow season in Interior Alaska is now generally about two weeks shorter than it was several decades ago, with the greatest changes occurring in spring. The date when half of Alaska is snow-free now occurs approximately 11 days earlier than in the late 1990s, increasing the likelihood of early-season ignitions. In response to these observed trends, Alaska fire managers formally advanced the start of the wildfire season from May 1 to April 1 in 2006. Satellite observations further indicate that snow-free days are increasing by more

[234] Grabinski, Z. & McFarland, H.R. Alaska's Changing Wildfire Environment 2.0 (2025). Alaska Fire Science Consortium, International Arctic Research Center, University of Alaska Fairbanks. http://www.frames.gov/afsc/acwe

than 4 days per decade across Interior and northern Alaska, thereby extending the window of flammable conditions.[235]

Within this evolving fire-weather environment, wildfire and urban conflagration risk in the FNSB is addressed through a coordinated, multi-agency framework involving federal, state, local, tribal, and private-sector partners. These efforts support wildfire prevention, preparedness, suppression, mitigation, and post-fire recovery, as well as structure-to-structure fire risk reduction within developed areas.[236]

The Alaska Master Cooperative Wildland Fire Management and Stafford Act Response Agreement establish formal cooperation among the Alaska Department of Natural Resources (DNR), the U.S. Department of the Interior (DOI) Bureau of Indian Affairs (BIA), BLM, U.S. Fish and Wildlife Service (USF&W), and the U.S. Forest Service. This agreement enables participating agencies to share information, personnel, equipment, supplies, services, and funding for wildfire prevention, preparedness, fuels treatment, hazard mitigation, fire planning, suppression, and post-fire rehabilitation and restoration.[237]

The Alaska Wildland Fire Coordinating Group (AWFCG) provides statewide leadership for coordination, collaboration, and communication among wildfire management agencies. AWFCG oversees interagency fire management practices and maintains committees focused on air quality and smoke management, education and prevention, fire research, fire weather, safety, operations, and fuels management—activities that support both wildfire mitigation and the reduction of urban conflagration risk.[238]

During periods of elevated fire activity, the Alaska Multi-Agency Coordination Group (AMAC) is activated to support incident prioritization, resource allocation,

[235] Grabinski, Z. & McFarland, H.R. Alaska's Changing Wildfire Environment 2.0 (2025). Alaska Fire Science Consortium, International Arctic Research Center, University of Alaska Fairbanks. http://www.frames.gov/afsc/acwe. Brown, R. et al. (2017). Arctic Terrestrial Snow Cover. In: Snow, Water, Ice and Permafrost in the Arctic (SWIPA) 2017. Arctic Monitoring and Assessment Programme (AMAP), Oslo, Norway.

[236] Fairbanks North Star Borough (FNSB). Community Wildfire Protection Plan (CWPP), 2025 Update.

[237] Alaska Department of Natural Resources (DNR). Alaska Master Cooperative Wildland Fire Management and Stafford Act Response Agreement; Alaska Interagency Wildland Fire Management Plan (AIWFMP).

[238] Alaska Wildland Fire Coordinating Group (AWFCG). Memorandum of Understanding, Standard Operating Procedures, and committee charters.

coordination of state and federal disaster responses, and anticipation of future resource needs. AMAC plays a critical role during complex fire seasons with multiple simultaneous incidents, including events that threaten populated areas and increase the potential for urban conflagration.[239]

The Alaska Interagency Wildland Fire Management Plan (AIWFMP) serves as the primary interagency reference for wildfire operational guidance in Alaska. Firefighter and public safety are emphasized as the overriding priority, and the plan promotes a cooperative, cost-effective approach to wildfire management across jurisdictions. The AWFCG is responsible for reviewing and updating the AIWFMP as conditions, policy, and best practices evolve.[240]

The AICC, located in Fairbanks at the AFS facility, functions as Alaska's Geographic Coordination Center. AICC coordinates statewide tactical resources, logistics support, and predictive services, and provides preparedness levels, situation reporting, fire perimeter mapping, prescribed fire information, and weather forecasts to support wildfire and urban conflagration response decision-making.[241]

The CWPP is a central wildfire and urban conflagration mitigation tool for the FNSB. Developed collaboratively by local, state, and federal agencies, community organizations, and residents, the 2025 CWPP identifies wildfire risk across the Borough and prioritizes mitigation actions in high-risk areas, particularly within the wildland-urban interface and developed communities vulnerable to structure-to-structure fire spread.[242]

Alaska Firewise complements the CWPP by promoting community-level actions that reduce wildfire and urban conflagration risk, including defensible space, ignition-resistant construction practices, and shared responsibility among homeowners and agencies. Communities that adopt a CWPP and complete Firewise projects may be recognized as Firewise Communities/USA.[243]

[239] Alaska Wildland Fire Coordinating Group (AWFCG). Memorandum of Understanding, Standard Operating Procedures, and committee charters.

[240] Alaska Department of Natural Resources (DNR). Alaska Master Cooperative Wildland Fire Management and Stafford Act Response Agreement; Alaska Interagency Wildland Fire Management Plan (AIWFMP). Alaska Wildland Fire Coordinating Group (AWFCG). Memorandum of Understanding, Standard Operating Procedures, and committee charters.

[241] Alaska Interagency Coordination Center (AICC); Bureau of Land Management Alaska Fire Service (AFS).

[242] Fairbanks North Star Borough (FNSB). Community Wildfire Protection Plan (CWPP), 2025 Update.

[243] National Fire Protection Association (NFPA). Firewise USA® Program; Alaska Firewise Program.

The BLM AFS, headquartered at Fort Wainwright within the FNSB, provides wildland fire suppression services for Department of the Interior and Native Corporation lands statewide. In addition to suppression, AFS supports fuels management, aviation operations, fire policy implementation, and operation of advanced systems such as the Alaska Lightning Detection System, contributing directly to the protection of communities and infrastructure within and adjacent to the Borough.[244]

5.6.2 Wildfire and Urban Conflagration Hazard Mitigation Successes

The FNSB, in coordination with the Alaska DNR and interagency partners, has implemented a range of mitigation actions that have reduced wildfire and urban conflagration risk over time. These efforts emphasize long-term planning, fuels management, responder readiness, and sustained public education and outreach, recognizing both resource constraints and evolving fire risk conditions.[245]

A Borough-wide CWPP was first completed in 2006, establishing a comprehensive framework to identify wildfire risk and prioritize mitigation actions across the borough. The CWPP introduced an exposure-based approach that identified Zones of Concern both within and outside established fire service areas, providing a defensible basis for mitigation planning and investment. This framework continues to inform wildfire and urban conflagration risk reduction efforts.[246]

To support fire-resilient development and emergency access, the FNSB Emergency Services Commission adopted a resolution recognizing the principles of the National Fire Protection Association (NFPA) 1141, *Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas*. This action established guidance for road access, water supply, and emergency service infrastructure to reduce wildfire and structure-to-structure fire risk associated with land-use change.[247]

[244] Alaska Interagency Coordination Center (AICC); Bureau of Land Management Alaska Fire Service (AFS).

[245] Fairbanks North Star Borough (FNSB) Community Wildfire Protection Plan (CWPP), 2006 and 2025 Updates. Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026.

[246] Fairbanks North Star Borough (FNSB). Community Wildfire Protection Plan (CWPP), 2006 and 2025 Updates.

[247] National Fire Protection Association (NFPA). NFPA 1141: Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas (2012 Edition).

Significant mitigation progress was achieved through hazardous fuels reduction projects implemented prior to the current update cycle. Approximately 2,300 acres of silvicultural fuels treatments were completed through extensive interagency coordination, public engagement, and permitting. Portions of this work were supported by $1.4 million in American Recovery and Reinvestment Act (ARRA) funding, and all funded projects were completed by the end of 2020. These treatments reduced wildfire intensity adjacent to communities and lowered the potential for ember exposure relevant to urban conflagration risk.[248]

Between 2021 and 2026, wildfire mitigation efforts within the Borough focused primarily on education, preparedness, training, and outreach, reflecting staffing and funding limitations that constrained implementation of formal Firewise community projects during this period. Firewise principles, including defensible space, ignition-resistant practices, evacuation readiness, and smoke awareness, were incorporated into broader emergency preparedness outreach rather than delivered through standalone Firewise programs.[249]

The Borough conducted extensive community preparedness outreach through home shows, fairs, expos, military newcomer orientations, senior outreach events, and wildfire-season engagement. These efforts provided opportunities to communicate information about wildland fire and urban conflagration risks, evacuation procedures, smoke impacts, and personal mitigation actions to residents in high-risk areas, supporting risk reduction through increased awareness and preparedness.[250]

Responder readiness and situational awareness were strengthened through training, exercises, and technology investments. The Borough supported wildfire-related tabletop, functional, and full-scale exercises; evacuation and sheltering exercises; and interagency coordination drills. Mobile GIS capabilities and updated high-resolution aerial imagery enhanced emergency response

[248] Fairbanks North Star Borough (FNSB). Community Wildfire Protection Plan (CWPP), 2006 and 2025 Updates. U.S. Department of Agriculture; U.S. Department of the Interior. American Recovery and Reinvestment Act (ARRA) Fuels Reduction Program Records.

[249] Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026.

[250] Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026.

planning, access mapping, and structure identification, critical to both wildfire and urban fire response.[251]

Volunteer and auxiliary capabilities further supported mitigation and response. Citizen Corps and Volunteer in Policing (VIP) programs contributed to wildfire season activities, including traffic control, evacuation support, animal sheltering, community information delivery, and smoke-related assistance. These activities reduced operational strain on primary responders and improved community resilience during wildfire and urban fire events.[252]

Collectively, these mitigation successes demonstrate sustained progress in reducing wildfire and urban conflagration risk within the FNSB through realistic, capacity-based actions that emphasize planning, education, responder readiness, and community engagement.[253]

5.6.3 City of Fairbanks

The City of Fairbanks has adopted by ordinance the family of International Code Council (ICC) model codes, including the *International Building Code (IBC)*, *International Fire Code (IFC)*, *International Mechanical Code*, *International Fuel Gas Code*, and *International Residential Code*. These codes establish minimum standards for building construction, fire protection systems, life safety features, and emergency access within the City.[254]

Adoption and enforcement of the ICC codes support reducing urban conflagration risk by addressing structural fire resistance, fire separation, fire suppression systems, means of egress, and access for emergency response. These measures

[251] Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026. Fairbanks North Star Borough (FNSB) GIS Program; Alaska Division of Forestry and Fire Protection (DFFP).

[252] Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026.

[253] Fairbanks North Star Borough (FNSB). Community Wildfire Protection Plan (CWPP), 2006 and 2025 Updates. Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026.

[254] International Code Council (ICC). International Building Code, International Fire Code, and related ICC model codes (adopted by local ordinance).

reduce the likelihood of structure-to-structure fire spread and support effective initial response by local fire departments within developed areas of the City.[255]

5.6.4 City of North Pole

The City of North Pole has adopted the same family of ICC model codes as the City of Fairbanks, including the *IBC*, *IFC*, *International Mechanical Code*, *International Fuel Gas Code*, and *International Residential Code*. These adopted codes establish consistent minimum standards for building and fire safety within the City.[256]

Implementation of these codes helps mitigate urban conflagration hazards by regulating construction practices, fire protection systems, and emergency access in developed areas. Consistent application of these standards supports life safety, reduces structural fire risk, and limits the potential for fire spread between adjacent buildings during urban fire events.[257]

5.6.5 FNSB

The FNSB is responsible for the safety and resilience of Borough-owned structures, including public facilities such as libraries and administrative buildings. For new construction and major renovations, the Borough conducts internal plan review using its own engineering staff to ensure conformance with applicable State of Alaska requirements and the ICC family of model codes.[258]

In addition to code compliance, the Borough must meet the standards of its property insurance provider, FM Global, which often exceed minimum code requirements. These standards commonly include enhanced fire protection

[255] International Code Council (ICC). International Building Code, International Fire Code, and related ICC model codes (adopted by local ordinance). Federal Emergency Management Agency (FEMA). Hazard Mitigation Planning Guidance – Structural Fire and Urban Conflagration Risk Reduction.

[256] International Code Council (ICC). International Building Code, International Fire Code, and related ICC model codes (adopted by local ordinance).

[257] International Code Council (ICC). International Building Code, International Fire Code, and related ICC model codes (adopted by local ordinance). Federal Emergency Management Agency (FEMA). Hazard Mitigation Planning Guidance – Structural Fire and Urban Conflagration Risk Reduction.

[258] Fairbanks North Star Borough (FNSB). Borough Facilities Design, Engineering, and Construction Practices.

measures such as automatic fire sprinkler systems, fire detection, and loss-prevention features that reduce fire severity and limit damage.[259]

Application of these enhanced standards strengthens mitigation of both urban conflagration and critical-facility fire risk by reducing the probability of fire spread within and between Borough-owned structures and by supporting continuity of essential public services following fire events.[260]

5.7 Fire Protection Services and Urban Conflagration Response Context

Fire protection and initial response to urban conflagration within the FNSB are primarily the responsibility of local fire departments, including municipal, borough, volunteer, and military fire services operating within defined service areas. These departments provide first response to structure fires and serve as the initial line of defense against structure-to-structure fire spread in developed areas.[261]

Urban conflagration incidents typically require a rapid initial attack to prevent escalation, particularly in areas with high structural density, limited access, or constrained firefighting water supplies. Local fire departments, therefore, play a critical role in life safety and property protection during the early stages of urban fire incidents.[262]

As fire incidents escalate beyond the capacity of local departments, mutual aid and interagency assistance may be requested from neighboring jurisdictions, state resources, and federal partners. Wildland fire agencies may support urban

[259] FM Global. Property Loss Prevention Data Sheets and Insurance Standards for Public Facilities.

[260] Fairbanks North Star Borough (FNSB). Borough Facilities Design, Engineering, and Construction Practices. FM Global. Property Loss Prevention Data Sheets and Insurance Standards for Public Facilities.

[261] Fairbanks North Star Borough (FNSB). Community Wildfire Protection Plan (CWPP), 2025 Update. Federal Emergency Management Agency (FEMA). Hazard Mitigation Planning Guidance – Structural Fire and Urban Conflagration Risk Reduction.

[262] Federal Emergency Management Agency (FEMA). Hazard Mitigation Planning Guidance – Structural Fire and Urban Conflagration Risk Reduction. National Fire Protection Association (NFPA). NFPA 1141: Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas.

conflagration response when fires originate in or spread from adjacent wildland areas, or when prolonged incidents strain local response capacity and resources.[263]

Fire protection capabilities within the Borough vary by location and are influenced by service area boundaries, access conditions, water availability, and distance from response resources. These factors contribute to differences in urban conflagration risk across the Borough and are considered in wildfire and urban fire mitigation planning, including the CWPP.[264]

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[263] Fairbanks North Star Borough (FNSB). Community Wildfire Protection Plan (CWPP), 2025 Update. Alaska Interagency Coordination Center (AICC); Alaska Division of Forestry and Fire Protection (DFFP). Interagency Fire Response and Mutual Aid Frameworks.

[264] Fairbanks North Star Borough (FNSB). Community Wildfire Protection Plan (CWPP), 2025 Update. National Fire Protection Association (NFPA). NFPA 1141: Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas.

6. Severe Weather Hazard Profile

Severe weather is a persistent and high-impact hazard for the FNSB. Windstorms, winter storms, and extreme cold events routinely produce cascading impacts, including prolonged power outages, infrastructure damage, transportation disruptions, supply-chain stress, and increased risk to life safety. These events frequently require activation of warming shelters, extended emergency operations, and external assistance, affecting both urban and rural areas of the Borough.[265]

A representative severe wind event illustrates the scale and consequences of severe weather in the FNSB. During this event, sustained winds of approximately 27 miles per hour, with gusts up to 55 miles per hour, caused widespread tree falls, localized structural damage, and extensive electrical outages. At the peak of the storm, more than 10,000 GVEA customers were without power. Approximately 3,000 to 5,000 customers remained without service more than 24 hours later, with restoration for some extending multiple days. School closures occurred across the Borough, and warming shelters were activated at West Valley High School and North Pole High School to address life-safety needs during cold conditions.[266]

Extended power outages during this event generated significant secondary impacts. Local retailers rapidly sold out of generators and alternative heating equipment, including kerosene heaters, within hours to days following the storm. These shortages highlighted the community's reliance on electricity for heat and water, as well as the limited redundancy in local supply chains during prolonged severe weather events.[267]

Due to the severity and geographic extent of damage, the Governor of Alaska declared a state disaster for the FNSB. The declaration enabled state support for emergency response and post-event recovery, including assistance for damaged infrastructure, extended utility outages, and additional personnel hours. Within the City of Fairbanks alone, hundreds of residences and businesses experienced prolonged power outages,

[265] National Weather Service (NWS), Fairbanks Forecast Office. Severe weather summaries and storm impact reports for Interior Alaska. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Interior Alaska climate characteristics and extreme weather context (Rick Thoman, climatologist).

[266] Fairbanks Daily News-Miner, November 15, 2013, windstorm impacts; State of Alaska disaster declaration statements

[267] Fairbanks Daily News-Miner, November 15, 2013, reporting on generator and heating supply shortages following severe winter storms.

reinforcing the vulnerability of both urban and rural areas to severe-weather-driven infrastructure failures, as illustrated in Figure 6-1.[268]

Figure 6-1**: Power Outage for over Thirty-Six Hours**



Source: Fairbanks North Star Borough Department of Community Planning, "Hazard Mitigation Plan: A Multi-Hazard, Multi-Jurisdictional Plan for the Fairbanks North Star Borough and its Communities," 1/27/2014

Figure 6-1 illustrates extended power outage conditions resulting from a severe weather event in the Borough. This image demonstrates the cascading impacts of severe weather on power infrastructure, including prolonged outages and associated risks to life safety, particularly during extreme cold conditions.

6.1 Nature and Location

Weather describes the day-to-day state of the atmosphere, including temperature, humidity, precipitation, cloud cover, visibility, and wind, while climate represents long-term averages and variability, typically measured over a 30-year period. Climate context is critical to understanding the range and severity of weather extremes affecting the FNSB. Short-term weather forecasts provide daily-to-weekly predictions, while seasonal

[268] Fairbanks Daily News-Miner reporting on November 2013 windstorm impacts; State of Alaska disaster declaration statements. Fairbanks North Star Borough Department of Community Planning. *Hazard Mitigation Plan: A Multi-Hazard, Multi-Jurisdictional Plan for the Fairbanks North Star Borough and its Communities* (2014).

outlooks and climate analyses describe broader patterns that influence the likelihood and impacts of severe weather events.[269]

The climate in Interior Alaska is strongly influenced by latitude, elevation, and geographic location. Fairbanks is located at approximately 64°50′ north latitude, resulting in extreme seasonal variation in daylight, ranging from nearly 22 hours of sunlight in June to fewer than four hours in December. Elevations within the Borough range from approximately 436 feet to over 5,700 feet above sea level, contributing to localized differences in temperature, wind exposure, and snow accumulation. The Borough lies between the Brooks Range to the north and the Alaska Range to the south, placing it within the continental Interior where air mass transitions can be abrupt and severe.[270]

The FNSB experiences a continental subarctic climate characterized by long, cold winters; relatively warm summers; large annual and seasonal temperature variability; low humidity; and generally light but variable precipitation. Winter conditions regularly include temperatures below 0°F, with extreme cold events below −40°F occurring most winters. Summer temperatures are comparatively moderate but can reach 80°F or higher during warm periods (Figure 6-2), illustrating the wide thermal range experienced across the year. This variability increases the likelihood that severe weather events will stress infrastructure systems and human health.[271] Recent research conducted by the Alaska Center for Climate Assessment and Preparedness (ACCAP) indicates that winter rain events are an increasingly significant hazard in Interior Alaska, producing prolonged icy conditions and complex cascading impacts across transportation, utilities, and emergency services.[272]

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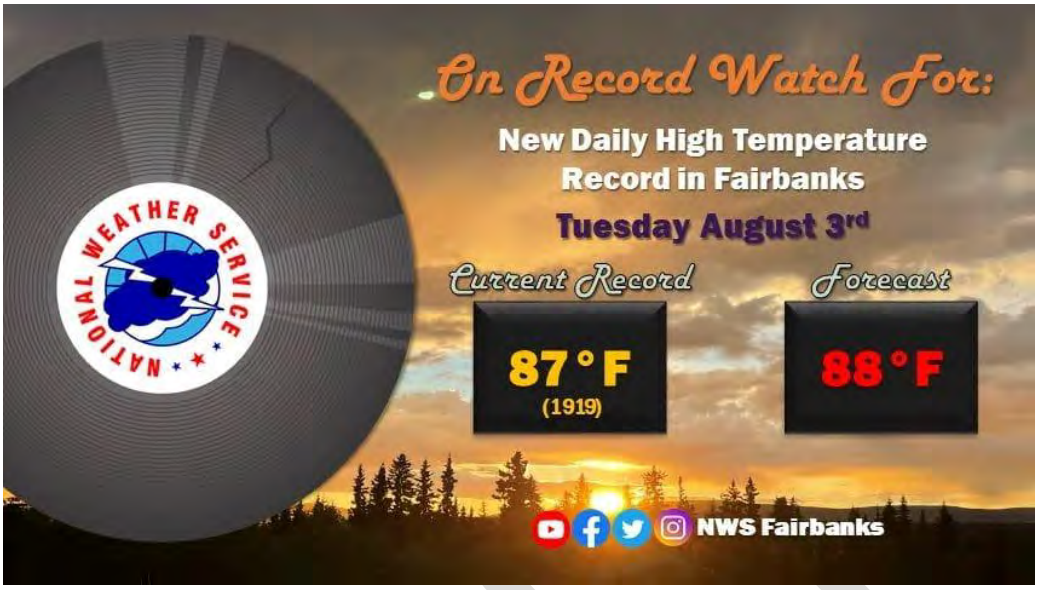
[269] National Weather Service (NWS), Fairbanks Forecast Office. Definitions of weather, climate, and severe weather; Interior Alaska forecast and climate context.

[270] Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Climate characteristics of Fairbanks and Interior Alaska (Rick Thoman, climatologist).

[271] Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Climate characteristics of Fairbanks and Interior Alaska (Rick Thoman, climatologist). National Centers for Environmental Information (NCEI); Alaska Climate Research Center. Fairbanks temperature extremes and climatological normals.

[272] Alaska Center for Climate Assessment and Preparedness (ACCAP), *Winter Rain in Interior Alaska: Community Impacts, Effective Responses, and Policy Implications*, Policy Brief, Spring 2026.

Figure 6-2: New Daily High Temperature Record in Fairbanks, August 3, 2021



Source: US National Weather Service, Fairbanks, Alaska

Figure 6-2 illustrates extreme summer temperature conditions recorded in Fairbanks. This example demonstrates the wide annual temperature variability in the Borough and highlights the potential for heat-related stress on infrastructure systems and human health, even in a predominantly cold-climate environment. Such temperature extremes, when combined with longer seasonal warming trends, contribute to increasing variability and complexity in severe weather patterns.

Compared to much of the contiguous United States, normal winter conditions in Interior Alaska would be considered severe. In the FNSB, severe weather most commonly involves extended periods of extreme cold, ice fog, dangerous wind chill, and heavy snow, often occurring in combination. Freezing rain and wet, heavy snow events, particularly during shoulder seasons, can create additional hazards by damaging trees, power lines, and structures, and by severely degrading road and pedestrian conditions. These hazards affect the entire Borough, including urban Fairbanks, outlying communities, and rural areas with limited access and longer response times.[273]

Severe weather exposure is borough-wide, but vulnerability varies by location. Areas with single access routes, limited emergency services coverage, or heavy reliance on electrical power for heating and water are particularly susceptible to prolonged impacts. Upland and hillside areas are more exposed to high winds and blowing snow, while low-lying areas may experience colder temperatures due to inversions, with communities such as

[273] National Weather Service (NWS), Fairbanks Forecast Office. Definitions of weather, climate, and severe weather; Interior Alaska forecast and climate context. State of Alaska. *2023 State of Alaska Hazard Mitigation Plan*; National Weather Service Fairbanks Forecast Office severe weather impact summaries.

North Pole often recording temperatures significantly colder than Fairbanks during extreme cold events.[274]

6.2 Historical Occurrences

The FNSB has one of the most comprehensive climate records in Interior Alaska. Fairbanks hosts the only climatological station in the Interior with an unbroken record exceeding 100 years, and it remains one of 21 first-order weather stations in Alaska. While seasonal mean temperature trends provide useful context, extreme values and their duration are the most significant indicators for understanding severe weather risk and operational impacts in the Borough.[275]

Temperature records show substantial warming across most seasons, while precipitation records, consistent since approximately 1916, demonstrate high interannual variability. Long-term analyses indicate that changes in temperature and precipitation patterns have increased the likelihood of compound hazards, including severe winter events, rain-on-snow episodes, and conditions conducive to drought and wildfire in other seasons, as illustrated in Figure 6-3.[276]

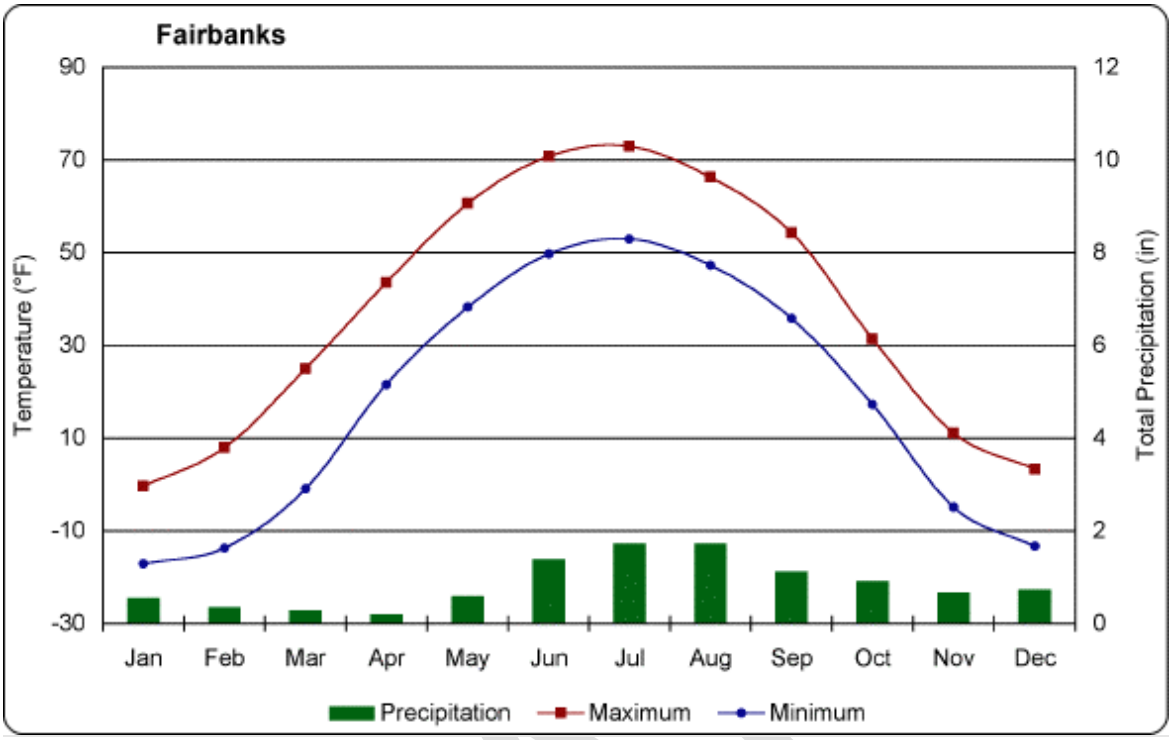
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[274] Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Climate characteristics of Fairbanks and Interior Alaska (Rick Thoman, climatologist). State of Alaska. *2023 State of Alaska Hazard Mitigation Plan*; National Weather Service Fairbanks Forecast Office severe weather impact summaries.

[275] National Weather Service (NWS), Fairbanks Forecast Office. Fairbanks first-order station history and Interior Alaska climate records. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Long-term temperature and precipitation records (Rick Thoman, climatologist).

[276] Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Long-term temperature and precipitation records (Rick Thoman, climatologist). State of Alaska. *2023 State of Alaska Hazard Mitigation Plan*. Alaska DHS&EM; FEMA-approved.

Figure 6-3: Mean Annual Temperature Trends – FNSB



Source: Alaska Center for Climate Assessment and Preparedness / University of Alaska Fairbanks.

Figure 6-3 illustrates long-term mean annual temperature trends in the FNSB based on historical climate data. This pattern indicates a warming trend over time, which contributes to increased variability in seasonal weather conditions and a higher likelihood of extreme events, including severe winter weather, rain-on-snow events, and conditions that influence wildfire activity. These long-term trends provide important context for interpreting historical severe weather events and their impacts on the Borough.

The following historic severe weather events exemplify the necessity of reviewing severe weather as an FNSB hazard:

6.2.1 Extreme Cold

Extreme cold events have repeatedly disrupted daily life, transportation, utilities, and aviation operations in the Borough. Interior Alaska experiences some of the coldest winter temperatures in the United States, and the severity and duration of cold events, rather than isolated minimum temperatures, are the primary drivers of operational and life-safety impacts.[277]

[277] National Weather Service (NWS), Fairbanks Forecast Office. Fairbanks temperature records, extreme cold summaries, and climatological observations. Alaska Climate Research Center (ACRC), University of Alaska

The historical record documents multiple benchmark extreme cold events. In December 1961 Fairbanks International Airport recorded an all-time December minimum temperature of -62°F, a record that remains a reference point for extreme cold in the Interior. That same month, extended periods of severe cold produced prolonged ice fog conditions, with more than 20 hours of dense ice fog recorded, significantly reducing visibility and disrupting surface and air transportation.[278]

In January 1989, Fairbanks experienced one of the most severe cold outbreaks on record, with temperatures ranging from approximately −50°F to −70°F for nearly two consecutive weeks. The persistence of the cold halted many routine activities, grounded aircraft for more than six days, strained utility systems, and created widespread life-safety concerns, particularly for residents dependent on electricity and fuel for heating.[279]

From December 27, 2008, through January 12, 2009, Fairbanks recorded 15 consecutive days with minimum temperatures at or below −40°F, the longest such cold snap since 1973. This prolonged event caused widespread operational disruptions, increased emergency response activity, and highlighted the vulnerability of transportation systems, fuel delivery, and critical infrastructure to extended extreme cold conditions.[280]

Most recently, late December 2025 through early January 2026 produced one of the coldest and most persistent early-winter periods on record for the Borough. Observations documented an extended run of daily minimum temperatures below -15°F, multiple days below −40°F, and prolonged periods with daily maximum temperatures at or below 0°F. The duration of this event placed sustained stress on power generation and distribution

Fairbanks. Fairbanks and Interior Alaska climate records and extreme temperature analyses (Rick Thoman, Alaska Climate Specialist).

[278] National Weather Service (NWS), Fairbanks Forecast Office. Fairbanks temperature records, extreme cold summaries, and climatological observations. Alaska Climate Research Center (ACRC). Ice fog frequency and extreme cold condition summaries for Fairbanks.

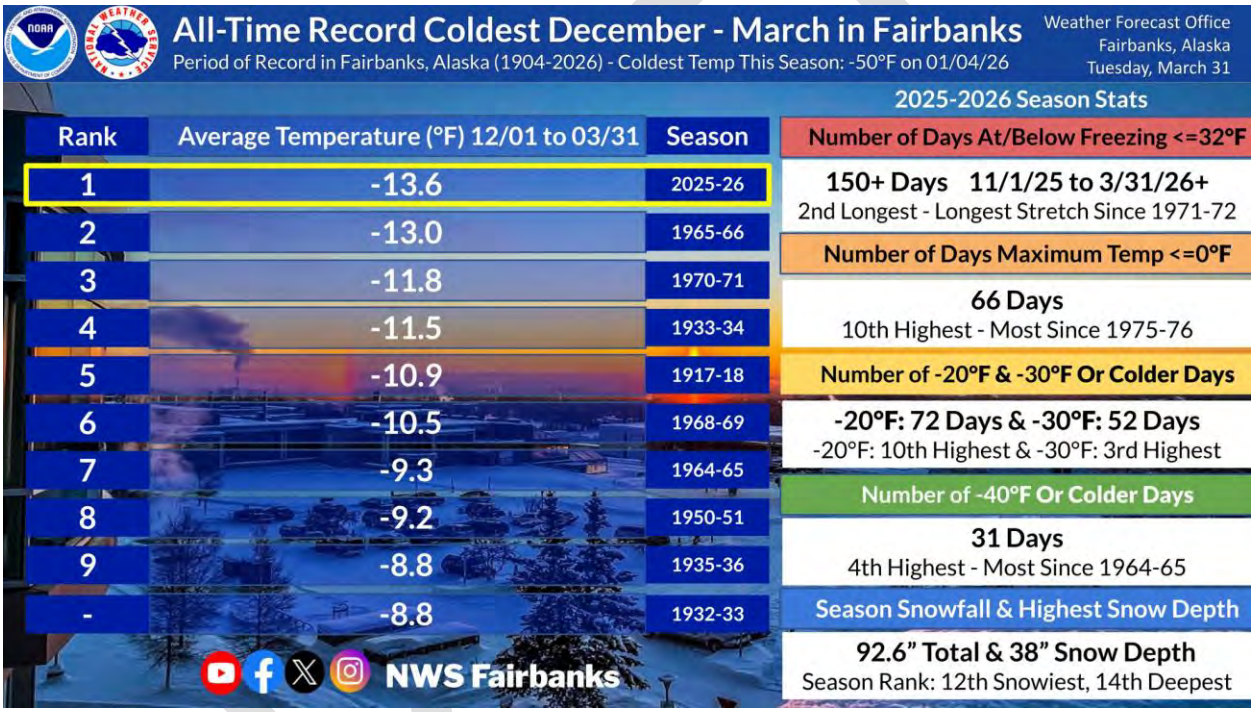
[279] National Weather Service (NWS), Fairbanks Forecast Office. Fairbanks temperature records, extreme cold summaries, and climatological observations. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Fairbanks and Interior Alaska climate records and extreme temperature analyses (Rick Thoman, Alaska Climate Specialist).

[280] National Weather Service (NWS), Fairbanks Forecast Office. Fairbanks temperature records, extreme cold summaries, and climatological observations. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Fairbanks and Interior Alaska climate records and extreme temperature analyses (Rick Thoman, Alaska Climate Specialist).

systems, transportation networks, emergency services, public services, and household heating resources across both urban and rural areas of the Borough.[281]

These events illustrate that extreme cold in the FNSB is best characterized by multi-day to multi-week persistence, which amplifies impacts through cumulative strain on infrastructure, fuel supplies, emergency response capacity, and human health. As documented by the ACRC and UAF climate analyses, the Interior continues to experience significant cold extremes even as long-term average temperatures increase, reinforcing extreme cold as a continuing, high-consequence hazard for the Borough, as illustrated in Figure 6-4.[282]

Figure 6-4: 2025-2026 All-Time Record Coldest December-March in Fairbanks



Source: National Weather Service, Fairbanks Forecast Office

Figure 6-4 illustrates record cold temperature conditions observed in Fairbanks during the 2025–2026 winter season. This pattern highlights the persistence and severity of extreme

[281] National Weather Service (NWS), Fairbanks Forecast Office. Fairbanks temperature records, extreme cold summaries, and climatological observations. National Weather Service Fairbanks; Alaska Climate Research Center. Winter 2025–2026 preliminary climate summary and temperature persistence analysis.

[282] Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Fairbanks and Interior Alaska climate records and extreme temperature analyses (Rick Thoman, Alaska Climate Specialist). University of Alaska Fairbanks, SNAP / ACCAP. Interior Alaska climate variability and extreme cold context within long-term warming trends.

cold events in the Borough and demonstrates how prolonged periods of low temperatures can intensify impacts on infrastructure systems, transportation, and life safety. These extended cold periods place cumulative stress on heating systems, fuel supplies, and emergency response resources, amplifying overall vulnerability.

6.2.2 Heavy Snow

Heavy snow events have repeatedly caused significant impacts on transportation, infrastructure, and structures across the FNSB. Interior Alaska snowfall hazards are defined not only by total accumulation but by storm timing, snow density, and persistence, all of which influence structural loading, tree failure, and transportation safety.[283]

Historic records document extreme snowfall events as early as January 1937, when one of the largest two-day snowfall totals on record was observed, and in February 1966, which remains the snowiest February recorded in Fairbanks, with more than 43 inches of total snowfall and a 24-hour record of 20.1 inches. These events provided early evidence of the Borough's vulnerability to high-impact winter storms that can overwhelm transportation and maintenance capacity.[284]

More recent heavy snow events demonstrate continued exposure and evolving consequences. In September 1992, an early wet snowfall accumulated on trees still in leaf, resulting in widespread tree failure, downed power lines, and prolonged outages affecting approximately 3,600 residences. In March 2009, more than 11 inches of snow fell within 36 hours, contributing to numerous traffic accidents, road closures, and delayed emergency response across the Borough.[285]

Heavy snow has also led to structural failures and impacts on critical infrastructure. During February 2011, record snowfall contributed to hazardous transportation conditions, including a railcar derailment caused by snow and ice accumulation on the tracks. Additional structural failures occurred in 2018 and 2020, when prolonged heavy snow

[283] National Weather Service (NWS), Fairbanks Forecast Office. Historical snowfall records, storm summaries, and impact reports for Interior Alaska. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Snowfall climatology and winter storm analyses for Fairbanks and Interior Alaska (Rick Thoman, Alaska Climate Specialist).

[284] National Weather Service (NWS), Fairbanks Forecast Office. Historical snowfall records, storm summaries, and impact reports for Interior Alaska. Alaska Climate Research Center (ACRC). Fairbanks monthly and daily snowfall extremes, including February 1966 records.

[285] National Weather Service (NWS), Fairbanks Forecast Office. Historical snowfall records, storm summaries, and impact reports for Interior Alaska. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Snowfall climatology and winter storm analyses for Fairbanks and Interior Alaska (Rick Thoman, Alaska Climate Specialist).

loads caused the collapse of the historic Masonic Temple, the F&H Fitness Studio, and an occupied warehouse on Deere Street, underscoring the risk posed by sustained snow loading to both historic and modern structures.[286]

The December 2021–January 2022 winter storm sequence further demonstrated the compound nature of heavy snow hazards in Interior Alaska. Deep snow accumulation followed by freezing rain created layered snow-and-ice conditions that shut down travel, damaged infrastructure, and contributed to widespread power outages prior to the onset of extreme cold. This event illustrates how heavy snow, when combined with freezing rain and subsequent temperature drops, can rapidly escalate into a borough-wide emergency with cascading impacts to transportation, utilities, and life safety.[287]

6.2.3 Freezing Rain

Freezing rain events, while less frequent than snowstorms in the FNSB, have produced disproportionately severe and widespread impacts due to rapid ice accretion on trees, power lines, road surfaces, and structures, as well as on snow. In Interior Alaska, freezing rain typically occurs during transition periods when warm air aloft overrides subfreezing surface temperatures, creating high-impact conditions that are difficult to forecast and mitigate.[288] Freezing rain events are relatively infrequent but high-consequence hazards in the Borough and are becoming more frequent as regional winter temperatures warm and precipitation patterns shift.[289] These events can affect the entire Borough simultaneously, though impacts vary by elevation, vegetation density, and road-maintenance jurisdiction.

Given the Interior's unique climate, ice can adhere to surfaces, making them icy until spring melt. This persistence creates prolonged hazardous conditions that affect multiple community lifelines, including transportation networks, electric power systems, and fuel

[286] National Weather Service (NWS), Fairbanks Forecast Office. Historical snowfall records, storm summaries, and impact reports for Interior Alaska. Fairbanks North Star Borough; NWS Fairbanks. Structural damage and transportation disruption reports associated with heavy snow events.

[287] National Weather Service (NWS), Fairbanks Forecast Office. Historical snowfall records, storm summaries, and impact reports for Interior Alaska. National Weather Service Fairbanks; Alaska Climate Research Center; UAF SNAP / ACCAP. December 2021–January 2022 winter storm sequence and compound snow-ice event summaries.

[288] National Weather Service (NWS), Fairbanks Forecast Office. Freezing rain event summaries, ice accretion impacts, and storm documentation for Interior Alaska. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Interior Alaska freezing rain climatology and winter transition event analysis (Rick Thoman, Alaska Climate Specialist).

[289] Alaska Center for Climate Assessment and Preparedness. *Winter rain in Interior Alaska: Community impacts, effective responses, and policy implications* (Eleanor Greenbaum, Policy Fellow, et al.).

and supply delivery. This ice accumulation can lead to transportation challenges, resulting in school and business closures (winter rain has accounted for 12 of the school district's 18 closures since 2010), EMS delays, and delays in the delivery of essential goods. These disruptions have cascading effects on community functionality, limiting access to healthcare, emergency services, and critical supplies during and after events. Icy conditions can also be extremely hazardous to personal safety; in seven of nine large and compound events from 2013 to 2024, the number of cars in crashes involving injury, fatality, or substantial damage increased compared with the same days the week before, when adjusted for traffic volume. Additional safety concerns can include slips, trips, and falls, impacts on homeless populations, and other hard-to-measure safety concerns. Populations particularly vulnerable to these conditions include residents without reliable heating or transportation, individuals experiencing homelessness, older adults, and those living in remote or low-maintenance road service areas. Ice on power lines and vegetation that falls on power lines contribute to outages: winter rain accounted for six of the GVEA's ten longest outages and four of the ten largest-scale events in terms of the number of members impacted. Winter rain events can also contribute to wildlife die-offs, and bring further challenges come spring melt. These impacts also contribute to significant economic losses, including increased emergency response costs, infrastructure repair, business interruption, and long-term maintenance burdens.[290]

Historic records document damaging freezing rain events dating back decades. In February 2003, nearly 0.3 inches of freezing rain were recorded in the Fairbanks area, resulting in hazardous conditions and localized infrastructure impacts. From November 22–24, 2010, a prolonged freezing rain event caused extensive ice accumulation on trees and power lines, leading to dangerous road conditions and widespread power outages across portions of the Borough.[291]

A particularly damaging freezing rain event occurred on November 13–15, 2013, resulting in a State and FEMA disaster declaration (DR-4162-AK). During this event, freezing rain combined with high winds and pre-existing snow loads caused widespread tree failure, structural damage, and school and government facility closures, resulting in prolonged power outages affecting thousands of residents. As outages extended into multiple days

[290] Alaska Center for Climate Assessment and Preparedness. *Winter rain in Interior Alaska: Community impacts, effective responses, and policy implications* (Eleanor Greenbaum, Policy Fellow, et al.).

[291] National Weather Service (NWS), Fairbanks Forecast Office. Freezing rain event summaries, ice accretion impacts, and storm documentation for Interior Alaska. Alaska Climate Research Center (ACRC). Historical freezing rain observations and ice storm impacts for Fairbanks.

and temperatures dropped below −20°F, life-safety risks increased substantially, particularly for residents dependent on electricity for heat and water.[292]

In December 2021 through early January 2022, a winter storm marked an unprecedented mid-winter freezing rain-on-snow event in the FNSB, commonly referred to locally as "Icemageddon." During this event, up to 1 inch of ice accumulated on top of a deep, pre-existing snowpack, creating layered snow-and-ice conditions that drove a 70% increase in significant car crashes, caused power outages impacting 20,000 GVEA members, contributed to a 35-40% decrease in moose populations, and came with significant cost to entities like DOT&PF, who paid approximately $4.8 million to respond to the event.[293] Travel was largely shut down for multiple days, emergency response operations were significantly constrained, and the event was followed by extreme deep-freeze temperatures, greatly increasing life-safety risks for residents without reliable heat or access to it. This event illustrates how freezing rain can act as a trigger hazard, initiating cascading failures across power, transportation, emergency response, and supply chain systems, as illustrated in Figure 6-5.[294]

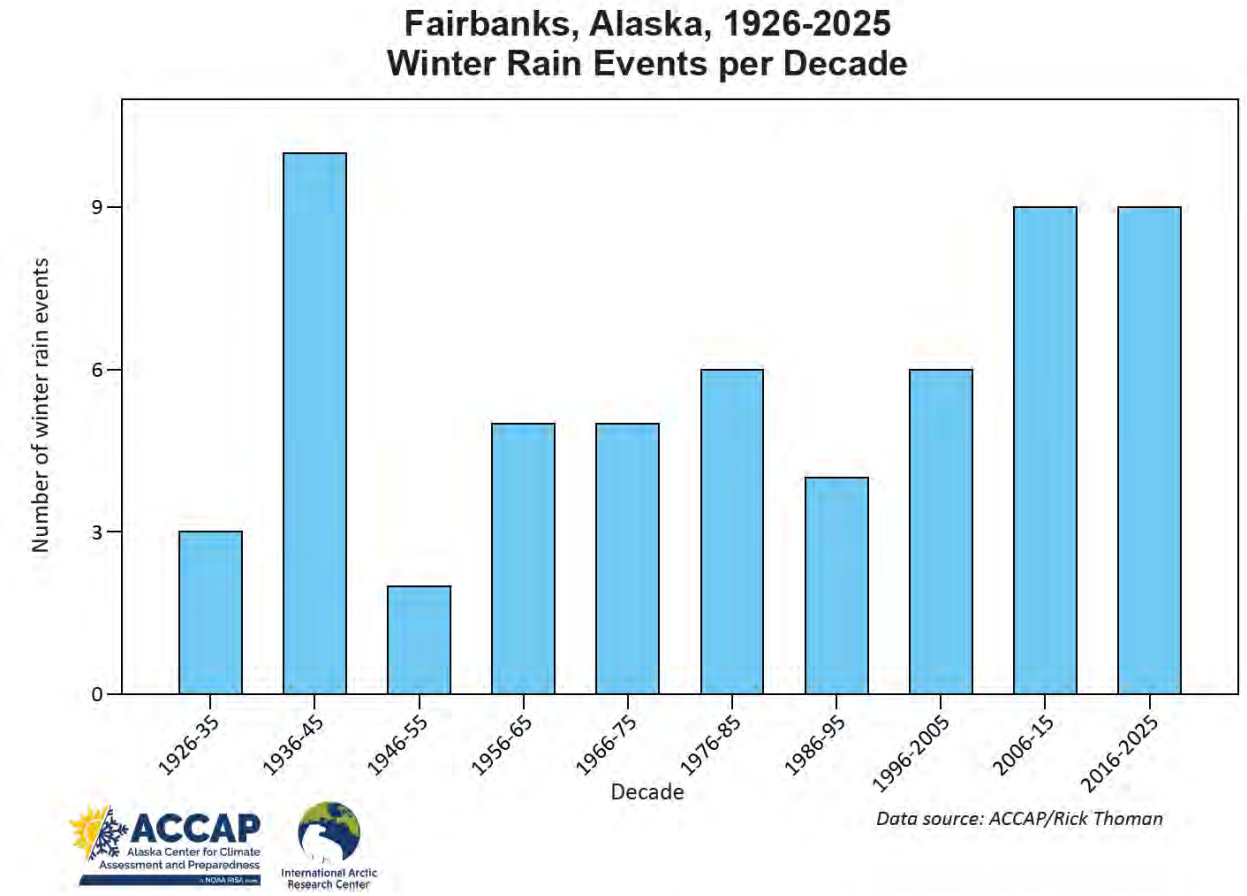
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[292] National Weather Service (NWS), Fairbanks Forecast Office. Freezing rain event summaries, ice accretion impacts, and storm documentation for Interior Alaska. Federal Emergency Management Agency (FEMA); State of Alaska DHS&EM. Disaster declaration DR-4162-AK and associated impact summaries.

[293] Alaska Center for Climate Assessment and Preparedness. *Winter rain in Interior Alaska: Community impacts, effective responses, and policy implications* (Eleanor Greenbaum, Policy Fellow, et al.).

[294] National Weather Service (NWS), Fairbanks Forecast Office. Freezing rain event summaries, ice accretion impacts, and storm documentation for Interior Alaska. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Interior Alaska freezing rain climatology and winter transition event analysis (Rick Thoman, Alaska Climate Specialist). University of Alaska Fairbanks, SNAP / ACCAP. *Alaska's Changing Environment 2.0* (2024): Freezing rain, rain-on-snow, and compound winter storm trends in Interior Alaska.

Figure 6-5: Freezing Rain and Ice Accretion in Interior Alaska



Source: Alaska Center for Climate Assessment and Preparedness / University of Alaska Fairbanks.

Figure 6-5 illustrates freezing rain and ice accretion conditions in Interior Alaska during a significant winter weather event. This image demonstrates how ice accumulation on trees, power lines, and infrastructure can lead to widespread outages, transportation disruptions, and cascading impacts across multiple community lifelines. Unlike other precipitation events, ice accumulation may persist for extended periods, prolonging hazardous conditions and delaying recovery.

As documented by ACRC and UAF climate analyses, freezing rain events in Interior Alaska increasingly pose the risk of compound winter storms, in which snow, freezing rain, wind, and subsequent extreme cold interact to produce cascading impacts. These events illustrate that even relatively short periods of freezing rain can rapidly escalate into borough-wide emergencies when combined with an existing snowpack and cold

temperatures, reinforcing the need to evaluate freezing rain as a distinct hazard within the Borough's severe weather risk framework.[295]

The December 2021 winter rain event ("Icemageddon") demonstrated the severity of this hazard in the FNSB, resulting in widespread outages, transportation disruptions, and significant economic and operational impacts across the region. [296] Mitigation actions addressing freezing rain impacts are incorporated into the Severe Weather Mitigation Actions (Table 11-3), including measures to improve backup power resilience, maintain transportation access, and enhance public communication before and during events.

Although freezing rain is grouped under severe weather, its unique characteristics, including long-lasting ice persistence, high infrastructure impacts, and increasing frequency, warrant consideration as an emerging standalone hazard within Interior Alaska's hazard landscape. Risk varies across the Borough based on infrastructure exposure, vegetation, and maintenance capacity, with transportation corridors, overhead utilities, and remote communities facing elevated vulnerability.

6.2.4 Lightning

Lightning is a recurring summer hazard in Interior Alaska and occurs more frequently in the FNSB than in most other regions of the state. While lightning events are less frequent than winter hazards, they pose direct risks to life safety and are the primary natural ignition source for wildland fires across the Interior.[297]

Climatological records indicate that Fairbanks experiences thunderstorms regularly during the summer months, with lightning most common from late June through July, particularly during warm, unstable periods. Lightning strikes are more frequent in upland

[295] Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Interior Alaska freezing rain climatology and winter transition event analysis (Rick Thoman, Alaska Climate Specialist). University of Alaska Fairbanks, SNAP / ACCAP. *Alaska's Changing Environment 2.0* (2024): Freezing rain, rain-on-snow, and compound winter storm trends in Interior Alaska.

[296] Alaska Center for Climate Assessment and Preparedness (ACCAP), *Winter Rain in Interior Alaska: Community Impacts, Effective Responses, and Policy Implications*, Spring 2026.

[297] National Weather Service (NWS), Fairbanks Forecast Office. Interior Alaska thunderstorm and lightning climatology; documented lightning injury and fatality incidents. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Lightning occurrence patterns and wildfire ignition statistics for Interior Alaska (Rick Thoman, Alaska Climate Specialist).

and hill areas surrounding Fairbanks than on the Tanana Valley floor, increasing wildfire ignition risk in areas with continuous forest fuels and limited access.[298]

Lightning has caused documented life-safety incidents within the Borough. In 1993, a lightning strike injured an individual at a ball field in North Pole, illustrating the risk posed to people engaged in outdoor activities during summer storms. Regional incidents further underscore this hazard; in 1986, a fatal lightning strike near Tok demonstrated the broader lightning risk in Interior Alaska, particularly in open terrain and during rapidly developing thunderstorms.[299]

Beyond direct injury, lightning is responsible for the vast majority of acreage burned by wildland fires in Alaska, including within the FNSB. A single thunderstorm can generate multiple lightning-caused ignitions over a short period, stretching detection, initial attack, and suppression resources, especially in remote or difficult-to-access areas. This characteristic makes lightning a key driver of large and complex wildfire seasons in Interior Alaska.[300]

As documented by ACRC and UAF climate analyses, warmer summer temperatures and longer snow-free seasons have increased the likelihood of lightning occurring under dry fuel conditions, raising the probability that strikes result in sustained fire starts. This reinforces lightning as a continuing and consequential severe weather hazard for the Borough, with impacts extending beyond the point of strike to regional wildfire risk, smoke exposure, and emergency response demands.[301]

6.2.5 High Winds

High-wind events have caused widespread damage across the Borough, particularly from tree failures, power outages, transportation disruptions, and infrastructure damage. While extreme wind speeds occur less frequently than winter precipitation hazards, wind

[298] National Weather Service (NWS), Fairbanks Forecast Office. Interior Alaska thunderstorm and lightning climatology; documented lightning injury and fatality incidents. University of Alaska Fairbanks, SNAP / ACCAP. Alaska lightning, wildfire ignition, and summer climate variability analyses.

[299] National Weather Service (NWS), Fairbanks Forecast Office. Interior Alaska thunderstorm and lightning climatology; documented lightning injury and fatality incidents. National Weather Service; State of Alaska public safety records. Documented lightning injury (1993 North Pole) and fatality (1986 Tok).

[300] Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Lightning occurrence patterns and wildfire ignition statistics for Interior Alaska (Rick Thoman, Alaska Climate Specialist). University of Alaska Fairbanks, SNAP / ACCAP. Alaska lightning, wildfire ignition, and summer climate variability analyses.

[301] Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Lightning occurrence patterns and wildfire ignition statistics for Interior Alaska (Rick Thoman, Alaska Climate Specialist). Alaska Climate Research Center (ACRC). Climate-driven changes in lightning-fire interactions and dry thunderstorm risk.

significantly amplifies impacts when combined with snow, ice, or freezing rain, increasing both the severity and geographic extent of damage.[302]

Historic wind events demonstrated the Borough's vulnerability. In September 1985, wind gusts of approximately 51 miles per hour were recorded at FIA, downed trees and power lines, leaving an estimated 3,000 homes without power. In April 2002, gusts of up to 50 miles per hour were reported near Eielson AFB, resulting in scattered infrastructure damage and hazardous travel conditions.[303]

More recent windstorms illustrate increasing operational impacts. On February 25, 2011, high winds combined with heavy wet snow to create severe drifting and blowing snow conditions, leading to the closure of major highways, including extended sections of the Parks and Steese Highways. On November 14, 2013, a major wind event associated with a severe winter storm resulted in a State and FEMA disaster declaration (DR-4162-AK). During this event, wind gusts of 50–60 miles per hour downed trees and power lines across the Borough, leaving nearly 14,000 homes without power, some for up to a week.[304]

On December 30, 2016, strong winds combined with heavy snowfall affected much of the FNSB, resulting in power outages impacting nearly 30,000 customers. Although most outages were restored relatively quickly, the event underscored the vulnerability of the electrical distribution system to wind-driven winter storms.[305]

Since 2016, damaging wind impacts in the FNSB have increasingly occurred as part of compound winter storms rather than isolated wind events. During the winter of 2019, a series of severe winter storms resulted in a State and FEMA disaster declaration

[302] National Weather Service (NWS), Fairbanks Forecast Office. High wind event summaries, wind climatology, and damage reports for Interior Alaska. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Wind climatology and compound winter storm analyses for Fairbanks and Interior Alaska (Rick Thoman, Alaska Climate Specialist).

[303] National Weather Service (NWS), Fairbanks Forecast Office. High wind event summaries, wind climatology, and damage reports for Interior Alaska. Alaska Climate Research Center (ACRC). Historical wind extremes and observational records for Fairbanks International Airport and Eielson AFB.

[304] National Weather Service (NWS), Fairbanks Forecast Office. High wind event summaries, wind climatology, and damage reports for Interior Alaska. Federal Emergency Management Agency (FEMA); State of Alaska DHS&EM. Disaster declaration DR-4162-AK and associated impact summaries.

[305] National Weather Service (NWS), Fairbanks Forecast Office. High wind event summaries, wind climatology, and damage reports for Interior Alaska. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Wind climatology and compound winter storm analyses for Fairbanks and Interior Alaska (Rick Thoman, Alaska Climate Specialist).

(DR-4648-AK) and combined high winds with heavy snow and freezing rain, producing widespread power outages, tree damage, and prolonged travel disruptions. Similar wind-exacerbated impacts were observed during the December 2021–January 2022 freezing rain-on-snow event, when wind contributed to tree and powerline failures under extreme ice loads. More recently, in December 2022, storms demonstrated how even moderate winds interacting with heavy snow can trigger power outages by causing snow-laden trees to contact distribution lines. These events illustrate that wind remains a significant driver of severe weather impacts in the Borough, particularly when combined with winter precipitation.[306]

6.2.6 Wind Chill

Extreme wind-chill conditions have posed recurring, severe life-safety risks in the FNSB, particularly when strong winds coincide with prolonged extreme cold. Wind chill significantly increases the rate of heat loss from exposed skin, accelerating the onset of frostbite and hypothermia events when ambient air temperatures alone might otherwise be survivable for short durations.[307]

Wind chill hazards are especially dangerous in rural, remote, and recreational areas of the Borough, where exposure times may be extended, and emergency response or rescue may be delayed due to distance, limited access, or weather-restricted travel conditions. Outdoor travel, subsistence activities, recreation, and occupational work during winter storms increase vulnerability to wind-chill exposure across the Interior.[308]

A notable wind-chill-related life-safety incident occurred in February 2011, when multiple snowmachiners became stranded in the White Mountains Recreation Area during consecutive winter storms. The combination of blowing snow, strong winds, and extreme cold produced dangerous wind-chill values, necessitating multi-day rescue operations.

[306] National Weather Service (NWS), Fairbanks Forecast Office. High wind event summaries, wind climatology, and damage reports for Interior Alaska. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Wind climatology and compound winter storm analyses for Fairbanks and Interior Alaska (Rick Thoman, Alaska Climate Specialist). University of Alaska Fairbanks, SNAP / ACCAP; National Weather Service Fairbanks. Post-2016 wind-driven winter storm impacts and power outage analyses.

[307] National Weather Service (NWS), Fairbanks Forecast Office. Wind chill criteria, cold weather safety guidance, and Interior Alaska incident summaries. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Extreme cold and wind-chill analyses for Fairbanks and Interior Alaska (Rick Thoman, Alaska Climate Specialist).

[308] National Weather Service (NWS), Fairbanks Forecast Office. Wind chill criteria, cold weather safety guidance, and Interior Alaska incident summaries. University of Alaska Fairbanks, SNAP / ACCAP. Winter weather exposure, rural risk, and cold-weather vulnerability assessments.

This incident highlighted the lethal potential of wind chill and the heightened vulnerability of individuals traveling or recreating outdoors during severe winter conditions.[309]

Wind chill hazards also compound the impacts of other severe weather events. Following major winter storms, including the December 2021–January 2022 ice and snow event, subsequent outbreaks of extreme cold significantly increased the risk of power outages, limited mobility, or inadequate heating for residents. In these situations, wind chill exacerbates the risk of hypothermia, strains emergency services, and prolongs recovery timelines, particularly for vulnerable populations such as older adults, individuals with medical conditions, and residents in housing that relies on electric heat.[310]

As documented by ACRC and UAF climate analyses, Interior Alaska continues to experience extreme cold air masses even as long-term average temperatures increase. When combined with wind, these conditions ensure that wind chill remains a persistent, high-consequence severe weather hazard for the Borough, requiring ongoing attention to preparedness, public messaging, and emergency response planning.[311]

6.3 Extent

Extent describes the severity or magnitude of a hazard, including the intensity, geographic scale, and potential level of impact on the planning area. The extent of severe weather within the FNSB varies based on location, seasonal conditions, and specific event characteristics.

The extent of severe weather events varies by hazard type and includes extreme cold temperatures, heavy snowfall, high winds, and winter rain events. These events may range from localized impacts to region-wide disruptions affecting transportation systems, utilities, and public safety. Duration and severity are key factors influencing the overall extent.

[309] National Weather Service (NWS), Fairbanks Forecast Office. Wind chill criteria, cold weather safety guidance, and Interior Alaska incident summaries. National Weather Service Fairbanks; Alaska State Troopers. February 2011 White Mountains Recreation Area rescue documentation.

[310] Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Extreme cold and wind-chill analyses for Fairbanks and Interior Alaska (Rick Thoman, Alaska Climate Specialist). Alaska Climate Research Center (ACRC); UAF SNAP / ACCAP. Interaction of extreme cold, wind, and infrastructure disruption in Interior Alaska winter events.

[311] Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Extreme cold and wind-chill analyses for Fairbanks and Interior Alaska (Rick Thoman, Alaska Climate Specialist). Alaska Climate Research Center (ACRC); UAF SNAP / ACCAP. Interaction of extreme cold, wind, and infrastructure disruption in Interior Alaska winter events.

In the FNSB, severe weather extent can include extreme cold temperatures below −40°F, heavy snowfall events exceeding 10 to 20 inches within short time periods, ice accretion from freezing rain exceeding several tenths of an inch, and wind gusts exceeding 50 miles per hour. Severe weather events may persist for multiple days to several weeks, particularly during prolonged cold-air outbreaks or compound winter storm sequences. Under these conditions, impacts may extend across the entire Borough, affecting utilities, transportation systems, and public safety at a regional scale and increasing the likelihood of cascading infrastructure disruptions and life-safety risks.

Extent is further illustrated through hazard mapping and exposure analysis presented in Chapter 4.

6.4 Possible Impacts from Future Events

Future severe weather events in the FNSB are expected to produce a range of life-safety, infrastructure, and operational impacts, particularly when hazards occur in combination or persist for extended durations. Severe winter weather, including extreme cold, heavy snow, freezing rain, high winds, wind chill, and ice fog, poses elevated risks to residents, responders, and critical systems across both urban and rural areas of the Borough.[312]

Life-safety impacts from future severe weather events may include hypothermia, frostbite, and carbon monoxide poisoning, particularly during prolonged power outages when residents rely on alternative or improperly vented heating sources. Extended cold exposure increases risk for vulnerable populations, including older adults, individuals with medical conditions, and residents experiencing housing instability.[313]

Severe weather events frequently disrupt power, water, wastewater, fuel delivery, and communications systems. Extreme cold can cause fuel gelling in storage tanks and supply lines, leading to failures in electric generation and heating systems. Frozen or buried pipes may fail during prolonged cold periods, particularly when snow cover is limited, resulting

[312] National Weather Service (NWS), Fairbanks Forecast Office. Severe weather impacts, winter storm hazards, wind chill guidance, and Interior Alaska event summaries. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Severe weather variability, compound hazards, and Interior Alaska climate analyses (Rick Thoman, Alaska Climate Specialist).

[313] National Weather Service (NWS), Fairbanks Forecast Office. Severe weather impacts, winter storm hazards, wind chill guidance, and Interior Alaska event summaries. Fairbanks North Star Borough Emergency Operations records; Alaska DHS&EM. Emergency response, sheltering, and life-safety impacts during severe weather events.

in water and sanitary sewer disruptions. These infrastructure failures can cascade, compounding impacts and prolonging recovery timelines.[314]

Transportation disruptions are a critical consequence of severe weather in the Interior. Heavy snow, freezing rain, ice fog, and high winds can close highways, ground aircraft, and disrupt rail service, restricting the movement of people, goods, and emergency services. Communities not connected to the road system are particularly vulnerable, as air transportation is often the sole means of access for food, fuel, medical supplies, and medevac services. During prolonged severe weather, residents may be stranded for days or weeks, and shortages of essential goods may occur locally.[315]

Emergency response operations may be constrained by hazardous travel conditions, reduced visibility, and increased demand for services, including warming centers, emergency sheltering, welfare checks, and medical response. Severe weather events place sustained strain on emergency responders, utilities, healthcare providers, and volunteer organizations, particularly during multi-day or multi-week incidents. Rural, off-road systems, and low-access communities are especially vulnerable due to longer response times and limited redundancy in infrastructure and services.[316]

Heavy snow and freezing rain may cause structural damage through excessive snow loading, roof collapse, tree failure, and downed power lines. Ice storms can create hazardous travel conditions, leading to vehicle accidents and pedestrian injuries, while subsequent thawing can cause localized flooding from rapid runoff and blocked drainage systems.[317]

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[314] National Weather Service (NWS), Fairbanks Forecast Office. Severe weather impacts, winter storm hazards, wind chill guidance, and Interior Alaska event summaries. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Severe weather variability, compound hazards, and Interior Alaska climate analyses (Rick Thoman, Alaska Climate Specialist).

[315] National Weather Service (NWS), Fairbanks Forecast Office. Severe weather impacts, winter storm hazards, wind chill guidance, and Interior Alaska event summaries. UAF SNAP / ACCAP. Transportation vulnerability, rural access risk, and supply chain sensitivity to severe weather in Interior Alaska.

[316] National Weather Service (NWS), Fairbanks Forecast Office. Severe weather impacts, winter storm hazards, wind chill guidance, and Interior Alaska event summaries. Fairbanks North Star Borough Emergency Operations records; Alaska DHS&EM. Emergency response, sheltering, and life-safety impacts during severe weather events.

[317] National Weather Service (NWS), Fairbanks Forecast Office. Severe weather impacts, winter storm hazards, wind chill guidance, and Interior Alaska event summaries. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Severe weather variability, compound hazards, and Interior Alaska climate analyses (Rick Thoman, Alaska Climate Specialist).

High winds and wind-chill conditions further amplify severe weather impacts. Wind-driven snow can quickly obscure roadways and trails, eliminating visual references and increasing the risk of disorientation, accidents, and exposure. Wind chill can become life-threatening even during moderately cold temperatures, with frostbite possible within minutes and hypothermia remaining the leading cause of winter weather-related fatalities.[318]

Localized convective wind events, including microbursts and dust devils, may also occur under certain atmospheric conditions. Microbursts can produce sudden, intense downdraft winds that damage structures and vegetation and disrupt aviation operations. Dust devils are typically smaller, short-lived phenomena that can reduce visibility and create localized hazards, particularly in dry or disturbed soil conditions.

Lightning, while less frequent than winter hazards, remains a critical summer severe weather concern due to its role as the primary ignition source for wildland fires. Lightning-caused fires can trigger cascading impacts, including smoke exposure, transportation disruptions, evacuations, and prolonged emergency response demands.[319]

Taken together, these impacts demonstrate that future severe weather events in the FNSB are most consequential when hazards interact or persist, producing cascading effects across infrastructure, transportation, public health, emergency services, and supply chains.[320] Winter rain events may also contribute to secondary hazards, including infrastructure damage during spring melt, localized flooding, and increased wildlife-human interactions.[321]

6.5 Recurrence Probability of Future Events

The probability of recurrence of severe weather events in the FNSB is high and certain. Extreme cold, heavy snow, high winds, wind chill, and ice fog occur every winter, while

[318] National Weather Service (NWS), Fairbanks Forecast Office. Severe weather impacts, winter storm hazards, wind chill guidance, and Interior Alaska event summaries. National Weather Service (NWS). Wind chill criteria, cold weather fatalities, and post-storm hazard guidance.

[319] Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Severe weather variability, compound hazards, and Interior Alaska climate analyses (Rick Thoman, Alaska Climate Specialist). Alaska Climate Research Center (ACRC); NWS Fairbanks. Lightning impacts and wildfire ignition relationships in Interior Alaska.

[320] National Weather Service (NWS), Fairbanks Forecast Office. Severe weather impacts, winter storm hazards, wind chill guidance, and Interior Alaska event summaries. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Severe weather variability, compound hazards, and Interior Alaska climate analyses (Rick Thoman, Alaska Climate Specialist).

[321] Alaska Center for Climate Assessment and Preparedness (ACCAP), *Winter Rain in Interior Alaska: Community Impacts, Effective Responses, and Policy Implications*, Spring 2026.

freezing rain and transition-season storms occur intermittently but with high consequence impacts. Although the precise timing, duration, and severity of individual events cannot be predicted far in advance, severe weather should be expected annually across the Borough.[322]

Climate observations and long-term records indicate that while average temperatures have increased, Interior Alaska continues to experience frequent extreme cold events, intense winter storms, and highly variable precipitation. This variability reinforces the likelihood of recurring severe weather hazards that stress infrastructure, transportation systems, utilities, and emergency response capacity on a regular basis.[323]

6.5.1 Fairbanks Climate and Weather Extremes

Fairbanks, like most of mainland Alaska south of the Brooks Range, has a subarctic continental climate characterized by short, warm summers; long, cold winters; and brief transition seasons in spring and fall. Systematic climate observations have been maintained in the Fairbanks area since 1904, with continuous National Weather Service records at the Fairbanks International Airport since 1951, providing one of the longest high-latitude climate datasets in the United States.[324]

Despite long-term warming trends, prolonged deep cold remains a recurring feature of Interior Alaska winters. Temperatures below -40°F continue to occur in many winters, posing persistent risks to life safety, infrastructure, and transportation. Long-term temperature records from the UAF Agricultural Experiment Farm, which extend back to 1912, show a marked increase in average annual temperature since the 1970s; however, this trend has not eliminated extreme cold events, which continue to define winter hazard conditions in the Borough.[325]

[322] National Weather Service (NWS), Fairbanks Forecast Office. Long-term climate observations and severe weather frequency records for Fairbanks. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Fairbanks climate normals, variability, and extreme event analysis (Rick Thoman, Alaska Climate Specialist).

[323] Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Fairbanks climate normals, variability, and extreme event analysis (Rick Thoman, Alaska Climate Specialist). University of Alaska Fairbanks, SNAP / ACCAP. Interior Alaska climate trends, variability, and implications for severe weather recurrence.

[324] National Weather Service (NWS), Fairbanks Forecast Office. Long-term climate observations and severe weather frequency records for Fairbanks. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Fairbanks climate normals, variability, and extreme event analysis (Rick Thoman, Alaska Climate Specialist).

[325] Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Fairbanks climate normals, variability, and extreme event analysis (Rick Thoman, Alaska Climate Specialist). University of Alaska Fairbanks, SNAP / ACCAP. Interior Alaska climate trends, variability, and implications for severe weather recurrence.

Precipitation across the FNSB is highly variable both seasonally and spatially. Annual precipitation totals in upland areas of the eastern Borough are typically two to three times greater than those recorded at FIA. While no strong long-term precipitation trend is evident, recent analyses show that the five-year period beginning in 2017 was wetter than any previous five-year period in the past nine decades, increasing the potential for heavy snow events and rain-on-snow or freezing-rain impacts.[326]

Summer temperature extremes also demonstrate increasing variability. Although the highest daily summer temperatures show no clear long-term trend over the past 90 years, the frequency of very warm days has increased. Between 1930 and 1989, only three summers recorded 20 or more days with highs at or above 80°F. Between 1990 and 2020, six such summers were recorded, reflecting an increase in warm-season extremes that influence thunderstorm development and lightning-related hazards.[327]

Historic climate records also demonstrate that unusual winter conditions are not unprecedented. For example, December 1934 featured multiple days with temperatures in the 50°Fs, resulting in a temporary loss of snow cover. While rare, such events illustrate the high variability of Interior Alaska's climate system and reinforce uncertainty in the timing and form of severe weather hazards.[328]

Together, these climate characteristics indicate that the FNSB will continue to experience recurring severe weather hazards, driven by a combination of extreme cold, winter storms, wind, variable precipitation, and seasonal transitions. These conditions support a high probability of severe weather impacts affecting the Borough annually, as illustrated in Figures 6-6 through 6-10.[329]

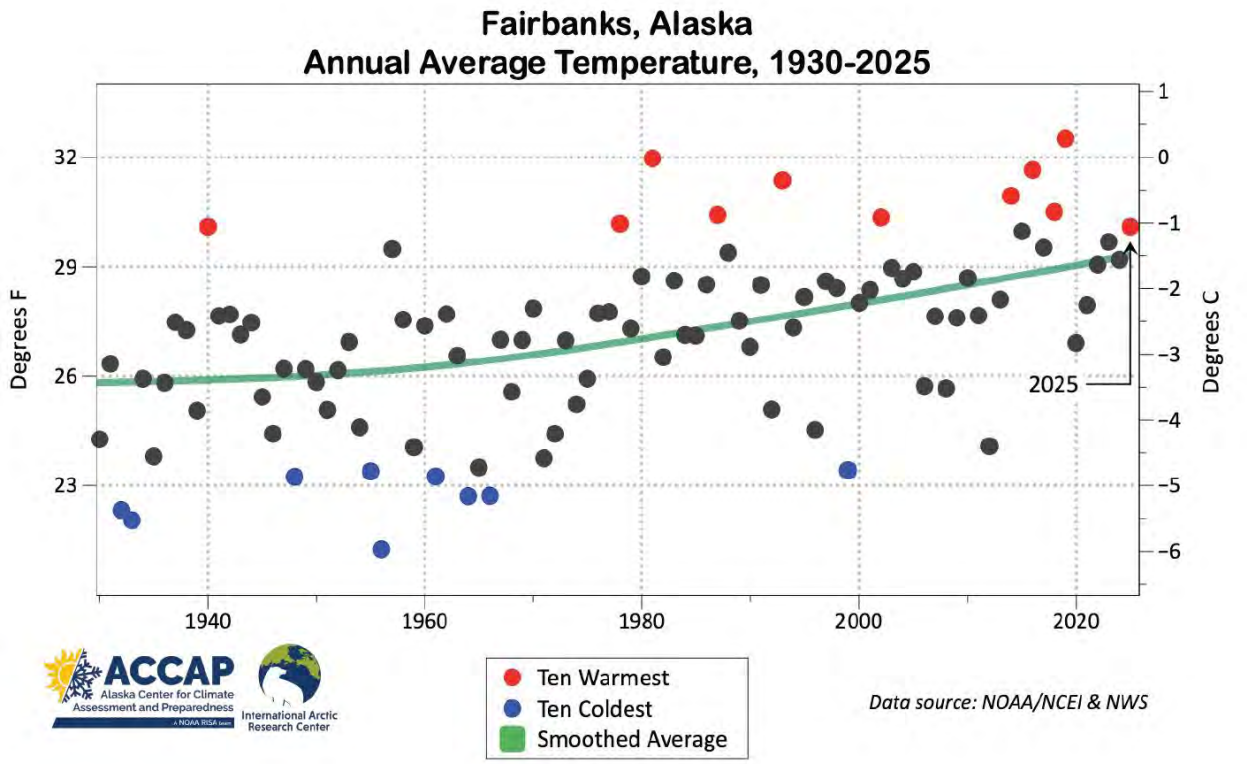
[326] Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Fairbanks climate normals, variability, and extreme event analysis (Rick Thoman, Alaska Climate Specialist). Alaska Climate Research Center (ACRC). Five-year precipitation anomaly analysis for Interior Alaska.

[327] Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Fairbanks climate normals, variability, and extreme event analysis (Rick Thoman, Alaska Climate Specialist). National Weather Service; Alaska Climate Research Center. Warm-season temperature extremes and thunderstorm climatology for Fairbanks.

[328] National Weather Service (NWS), Fairbanks Forecast Office. Long-term climate observations and severe weather frequency records for Fairbanks. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Fairbanks climate normals, variability, and extreme event analysis (Rick Thoman, Alaska Climate Specialist).

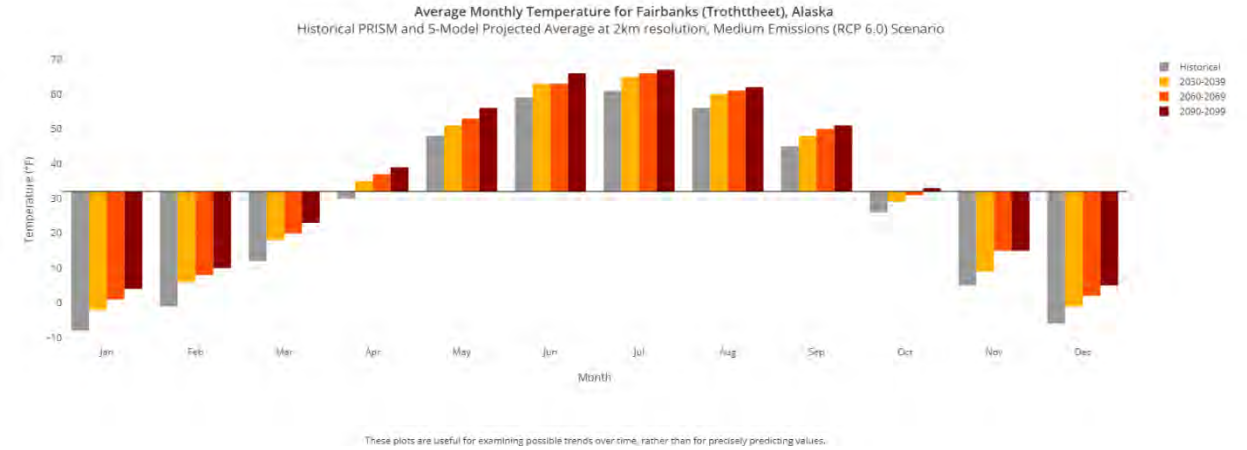
[329] National Weather Service (NWS), Fairbanks Forecast Office. Long-term climate observations and severe weather frequency records for Fairbanks. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Fairbanks climate normals, variability, and extreme event analysis (Rick Thoman, Alaska Climate Specialist). University of Alaska Fairbanks, SNAP / ACCAP. Interior Alaska climate trends, variability, and implications for severe weather recurrence.

Figure 6-6: Annual Average Temperature – Fairbanks Area



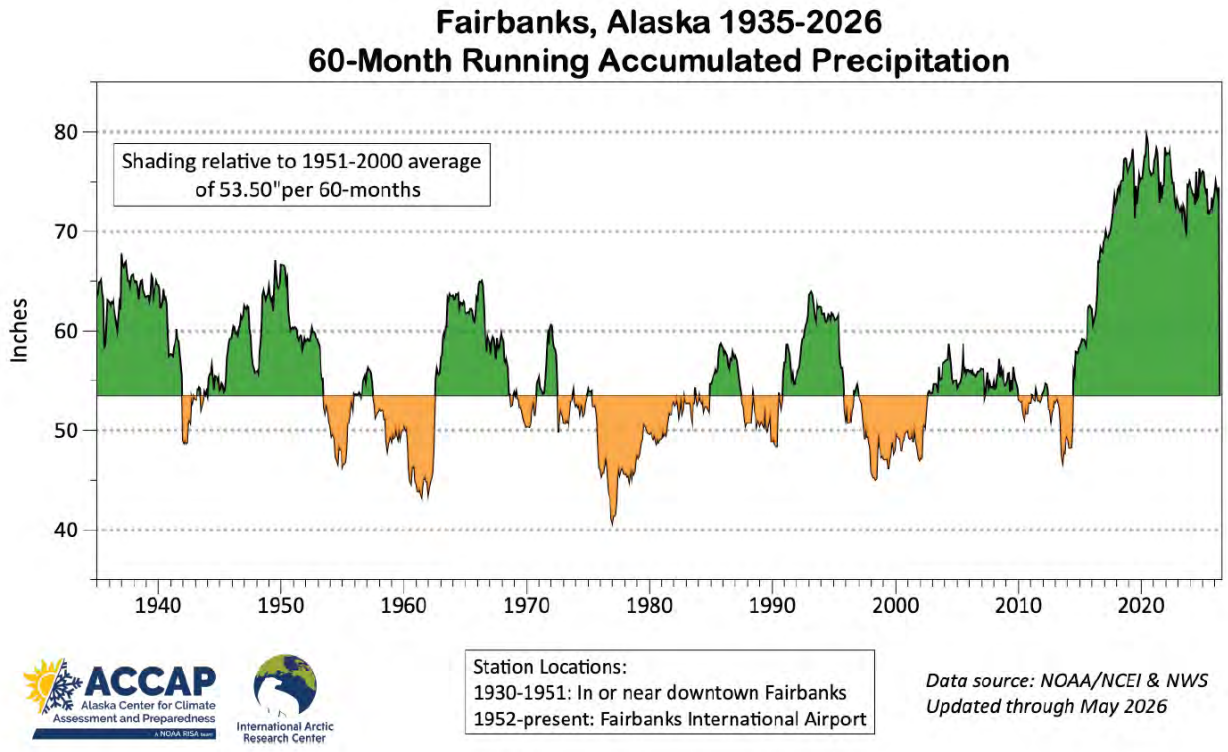
Source: Alaska Center for Climate Assessment and Preparedness / University of Alaska Fairbanks.

Figure 6-7: Average Monthly Temperature – Fairbanks



Source: Scenarios Network for Alaska + Arctic Planning, University of Alaska Fairbanks.

Figure 6-8: Five-Year Running Precipitation Departure – FNSB



Source: Alaska Center for Climate Assessment and Preparedness / University of Alaska Fairbanks.

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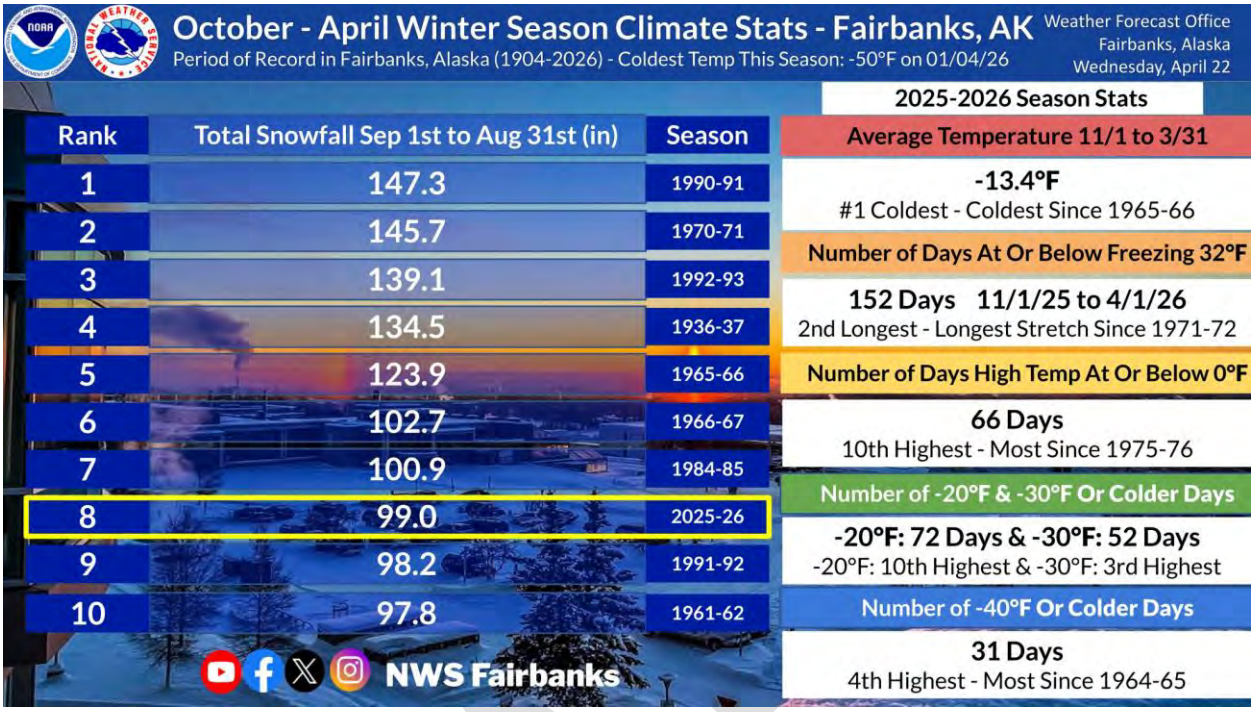
Figure 6-9: December 1934 Climate Data – Fairbanks

Climatological Data for Fairbanks Area, AK (ThreadEx) - December 1934

Date	Max Temperature	Min Temperature	Avg Temperature	Avg Temperature Departure	HDD	CDD	Precipitation	Snowfall	Snow Depth
1934-12-01	10	-14	-2.0	-0.7	67	0	0.10	0.8	4
1934-12-02	9	-12	-1.5	0.0	66	0	0.00	1.5	5
1934-12-03	44	6	25.0	26.6	40	0	0.00	0.0	4
1934-12-04	52	22	37.0	38.8	28	0	0.07	0.3	4
1934-12-05	58	40	49.0	51.0	16	0	0.00	T	0
1934-12-06	51	28	39.5	41.6	25	0	0.00	0.0	0
1934-12-07	52	39	45.5	47.8	19	0	T	0.0	0
1934-12-08	55	35	45.0	47.5	20	0	0.00	0.0	0
1934-12-09	36	24	30.0	32.7	35	0	0.07	0.5	T
1934-12-10	24	18	21.0	23.9	44	0	T	0.0	T
1934-12-11	22	19	20.5	23.5	44	0	0.02	0.3	T
1934-12-12	24	18	21.0	24.2	44	0	0.01	0.4	1
1934-12-13	19	1	10.0	13.5	55	0	T	T	1
1934-12-14	3	-8	-2.5	1.2	67	0	T	T	1
1934-12-15	12	-3	4.5	8.4	60	0	0.00	0.0	T
1934-12-16	8	-8	0.0	4.1	65	0	0.00	0.0	T
1934-12-17	-7	-12	-9.5	-5.1	74	0	0.00	0.0	T
1934-12-18	-12	-20	-16.0	-11.4	81	0	0.00	0.0	T
1934-12-19	3	-21	-9.0	-4.1	74	0	0.00	0.0	T
1934-12-20	-8	-24	-16.0	-10.9	81	0	0.00	0.0	T
1934-12-21	-24	-27	-25.5	-20.1	90	0	0.00	0.0	T
1934-12-22	-21	-27	-24.0	-18.4	89	0	0.00	0.0	T
1934-12-23	-16	-28	-22.0	-16.1	87	0	0.00	0.0	T
1934-12-24	-24	-29	-26.5	-20.3	91	0	0.00	0.0	T
1934-12-25	-12	-29	-20.5	-14.0	85	0	0.00	0.0	T
1934-12-26	-4	-19	-11.5	-4.8	76	0	0.05	1.4	1
1934-12-27	-2	-11	-6.5	0.5	71	0	0.06	0.8	2
1934-12-28	-2	-20	-11.0	-3.7	76	0	0.01	1.2	3
1934-12-29	-20	-32	-26.0	-18.5	91	0	0.00	T	3
1934-12-30	-25	-37	-31.0	-23.2	96	0	0.00	0.0	3
1934-12-31	-35	-40	-37.5	-29.5	102	0	0.00	0.0	3
Sum	270	-171	-	-	1959	0	0.39	7.2	-
Average	8.7	-5.5	1.6	5.9	-	-	-	-	1.1
Normal	4.3	-13.0	-4.3	-	2150	0	0.57	10.9	-

Source: US National Weather Service, Fairbanks, Alaska.

Figure 6-10: Winter Season Climate Statistics – Fairbanks (2025-2026)



Source: National Weather Service, Fairbanks, Alaska Climate Research Center, UAF SNAP / ACCAP.

Figures 6-6 through 6-10 illustrate long-term climate and weather variability in the Fairbanks area, including trends in temperature and precipitation, as well as notable extreme conditions. Together, these data demonstrate substantial variability in both temperature and precipitation over time, including warming trends, increased frequency of warm-season extremes, and periods of elevated precipitation. These patterns contribute to the increasing complexity of severe weather hazards in the Borough, including extreme cold events, winter storms, precipitation variability, and compound hazard conditions. These climate trends provide important context for understanding both the recurrence and severity of severe weather events in the FNSB.

6.6 Climate-Informed Risk Considerations

Changing climate conditions are expected to increase the complexity and consequences of severe weather in the Borough, rather than eliminate cold-weather hazards. Observed and projected trends indicate increased weather variability, particularly during shoulder seasons, alongside continued exposure to extreme winter conditions. This variability

increases the likelihood of compound severe weather events that combine snow, freezing rain, wind, and subsequent extreme cold.[330]

Climate analyses for Interior Alaska indicate an increased frequency of freezing rain, rain-on-snow events, and wet, heavy snow, all of which pose elevated risk to infrastructure, transportation systems, and electrical distribution networks. These conditions increase the risk of tree failure, downed power lines, structural loading, and prolonged outages, particularly when events persist for multiple days.[331]

At the same time, life-threatening extreme cold events continue to occur, even as long-term average temperatures rise. When extreme cold follows winter storms, the combined effects can significantly increase risk to life safety, especially for residents without reliable heat, those with limited mobility, and individuals dependent on electricity-based heating systems.[332]

Climate-driven impacts to transportation corridors and energy systems may extend recovery timelines following severe weather events, particularly when storms coincide with other hazards or affect multiple systems simultaneously. Disruptions to power generation, fuel delivery, road access, aviation, and communications can create cascading impacts, including supply chain disruptions affecting food, fuel, and medical supplies across Interior Alaska.[333]

Recent events further illustrate the expanding range of temperature extremes affecting the Borough. The issuance of the first recorded heat advisory in Fairbanks underscores increasing temperature variability and highlights the need to plan for a broader spectrum of severe weather conditions across seasons. While heat is addressed separately in planning efforts, its occurrence reinforces the importance of all-hazards, climate-informed

[330] Federal Emergency Management Agency (FEMA). *Local Mitigation Planning Policy Guide* (FP-206-21-002) and climate-informed risk guidance. Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Interior Alaska climate summaries and record analyses (Rick Thoman, Alaska Climate Specialist).

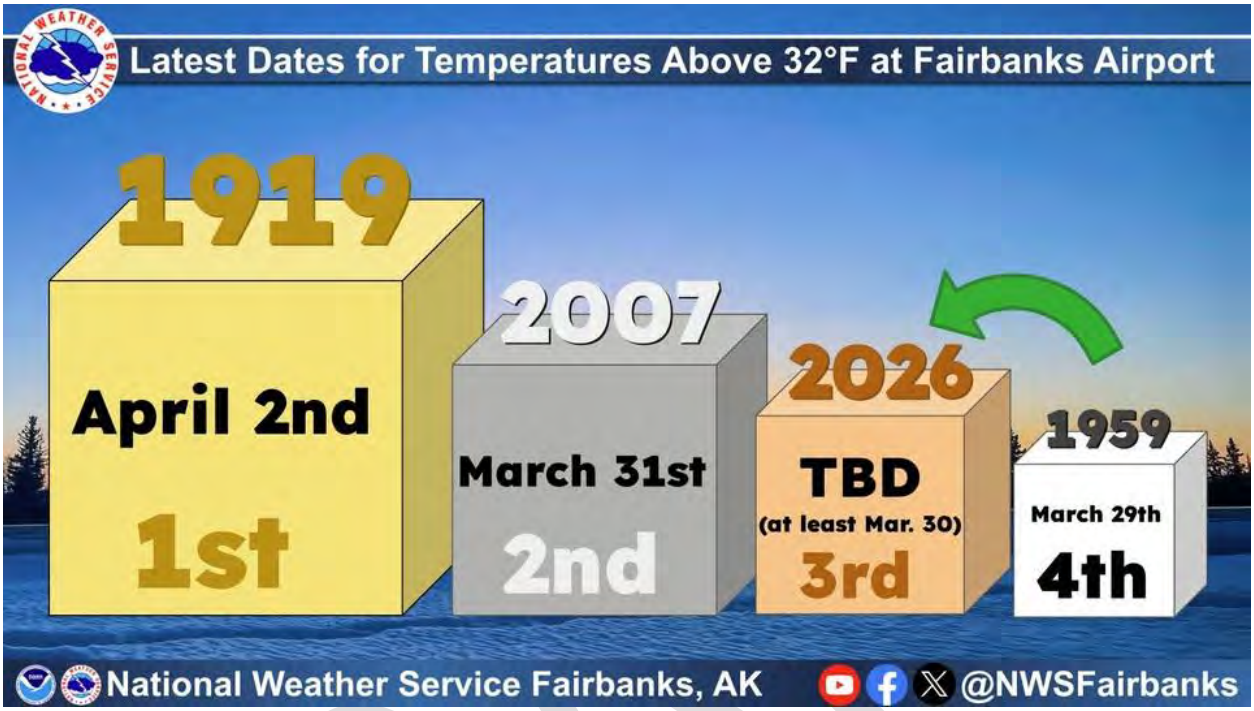
[331] Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Interior Alaska climate summaries and record analyses (Rick Thoman, Alaska Climate Specialist). University of Alaska Fairbanks, SNAP / ACCAP. *Alaska's Changing Environment 2.0* (2024): Severe weather variability, rain-on-snow, and infrastructure risk.

[332] Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Interior Alaska climate summaries and record analyses (Rick Thoman, Alaska Climate Specialist). National Weather Service (NWS), Fairbanks Forecast Office. Extreme cold events and post-storm hazard analyses.

[333] Federal Emergency Management Agency (FEMA). *Local Mitigation Planning Policy Guide* (FP-206-21-002) and climate-informed risk guidance. University of Alaska Fairbanks, SNAP / ACCAP. *Alaska's Changing Environment 2.0* (2024): Severe weather variability, rain-on-snow, and infrastructure risk.

mitigation strategies that emphasize redundancy, continuity of operations, and preparedness for extended-duration events, as illustrated in Figure 6-11.[334]

Figure 6-11: Latest Dates Temperature Above 32°F – Fairbanks Area



Source: National Weather Service, Fairbanks Forecast Office.

Figure 6-11 illustrates the timing of late-season temperatures above freezing in the Fairbanks area. This pattern indicates increasing variability in seasonal temperature transitions, including later occurrences of above-freezing conditions, which can contribute to more frequent freeze-thaw cycles, rain-on-snow events, and other complex severe weather conditions. These shifts in seasonal temperature patterns increase the likelihood of compound hazard events and extend the period during which infrastructure and transportation systems are exposed to variable and potentially hazardous conditions.

6.7 Existing Programs and Capabilities

The FNSB participates in nationally recognized preparedness initiatives that strengthen severe weather readiness, situational awareness, and emergency coordination. These programs support hazard mitigation by improving the dissemination of warnings, public

[334] Alaska Climate Research Center (ACRC), University of Alaska Fairbanks. Interior Alaska climate summaries and record analyses (Rick Thoman, Alaska Climate Specialist). Alaska Climate Research Center (ACRC); National Weather Service Fairbanks. Heat advisory issuance and temperature variability records for Fairbanks.

preparedness, and interagency coordination before and during high-impact severe weather events.[335]

The Borough and the UAF are designated participants in the NWS StormReady® program, demonstrating sustained capability in weather monitoring, warning reception, public alerting, and emergency response coordination. In addition, the Borough Emergency Management and UAF participate as National Oceanic and Atmospheric Administration (NOAA) Weather-Ready Nation (WRN) Ambassadors, reinforcing collaboration with the NWS, public outreach, and consistent resilience messaging related to severe weather hazards.[336]

Together, these programs enhance the Borough's capacity to prepare for, respond to, and recover from severe weather by supporting redundant warning pathways, coordinated emergency operations, and ongoing public education focused on life-safety risks associated with extreme cold, winter storms, high winds, and other severe weather hazards.[337]

6.7.1 StormReady®

The StormReady® program is a voluntary NWS initiative designed to help communities and universities better prepare for hazardous weather and flooding. StormReady® recognition reflects a demonstrated commitment to maintaining the infrastructure, procedures, and coordination necessary to protect life and property during severe weather events.[338]

To achieve and maintain StormReady® status, a community or institution must demonstrate the ability to:

- ★ Maintain a 24-hour warning point and emergency operations capability
- ★ Receive NWS warnings through multiple, redundant pathways

[335] National Weather Service (NWS). *StormReady® Program* documentation and designation records for Fairbanks North Star Borough and University of Alaska Fairbanks.

[336] National Weather Service (NWS). *StormReady® Program* documentation and designation records for Fairbanks North Star Borough and University of Alaska Fairbanks. National Oceanic and Atmospheric Administration (NOAA). *Weather-Ready Nation Ambassador* initiative documentation and recognition records for Interior Alaska partners.

[337] National Weather Service (NWS). *StormReady® Program* documentation and designation records for Fairbanks North Star Borough and University of Alaska Fairbanks.

[338] National Weather Service (NWS). *StormReady® Program* documentation and designation records for Fairbanks North Star Borough and University of Alaska Fairbanks.

- ★ Disseminate warnings to the public using more than one communication method
- ★ Monitor local weather and flood conditions
- ★ Conduct ongoing public preparedness education
- ★ Address hazardous weather and flooding in emergency management planning, training, and exercises

The FNSB became the first borough in the State of Alaska to be recognized as a StormReady® community on August 30, 2016. The UAF became the first university in Alaska to achieve StormReady® University recognition on December 4, 2018. These designations reflect long-standing coordination between emergency management, the NWS, and institutional partners within the Borough.[339]

6.7.2 Weather-Ready Nation (WRN) Ambassador

The NOAA WRN Ambassador initiative is a national partnership program that brings together organizations committed to increasing resilience to extreme weather, water, and climate events. WRN Ambassadors collaborated with NOAA to promote preparedness messaging, share risk information, and model best practices for organizational readiness.[340]

FNSB Emergency Management was recognized as a WRN Ambassador on November 28, 2016, and the UAF received WRN Ambassador recognition on December 4, 2018. By participating in this initiative, both organizations support consistent, science-based communication about severe weather risks and preparedness actions relevant to Interior Alaska.[341]

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[339] National Weather Service (NWS). *StormReady® Program* documentation and designation records for Fairbanks North Star Borough and University of Alaska Fairbanks.

[340] National Oceanic and Atmospheric Administration (NOAA). *Weather-Ready Nation Ambassador* initiative documentation and recognition records for Interior Alaska partners.

[341] National Oceanic and Atmospheric Administration (NOAA). *Weather-Ready Nation Ambassador* initiative documentation and recognition records for Interior Alaska partners.

7. Flood Hazard Profile

Flooding has been a recurring natural hazard in the FNSB, driven by snowmelt, ice jams, rainfall, and riverine processes associated with the Chena and Tanana River systems. Flood risk varies across the Borough based on proximity to waterways, topography, land use, and the presence of flood control infrastructure.

The Borough benefits from major flood risk-reduction systems, including the Chena River Lakes Flood Control Project and the Tanana River Levee System, which have significantly reduced flood damage during multiple historic events. However, these systems do not eliminate flood risk, as overtopping, structural failure, limitations in interior drainage, and extreme hydrologic events remain possible. Accordingly, flooding continues to represent a significant hazard requiring ongoing planning, maintenance, and emergency preparedness.

7.1 Nature and Location

Flooding in the FNSB occurs when river systems, drainage networks, or low-lying areas are unable to convey or store runoff generated by snowmelt, rainfall, ice processes, or groundwater rise. Flood risk in the Borough is strongly influenced by seasonal hydrology, river ice dynamics, flat valley topography, and the presence of major flood control infrastructure along the Chena and Tanana Rivers.

The primary flood-prone areas of the Borough are associated with the Chena River, Tanana River, and Salcha River, as well as their connected floodplains, and low-relief urban and suburban areas with limited drainage capacity. Flooding may occur during spring breakup, summer rainfall events, or winter conditions, depending on hydrologic and climatic drivers.

7.1.1 Riverine Flooding (Snowmelt and Rainfall)

Riverine flooding results from spring snowmelt and heavy summer rainfall, which increases runoff and raises river stages. In Interior Alaska, snowmelt flooding typically occurs from late April through May, particularly when rapid warming follows a winter with an above-average snowpack or when the ground remains frozen, limiting infiltration. Rainfall-driven flooding most often occurs in late summer and early fall, when prolonged or intense precipitation exceeds channel capacity. August is typically the wettest month in Fairbanks, increasing late-season flood potential.

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7.1.2 Ice Jam Flooding

Ice jam flooding is a significant and high-risk flood mechanism in the FNSB. During spring breakup, river ice may accumulate at natural constrictions, bends, bridge crossings, or channel irregularities, forming temporary dams that cause rapid rises in upstream water levels. Ice jam flooding can occur with little warning, inundating adjacent areas within minutes. Sudden ice-jam release can also cause downstream flooding. Ice jam events are often exacerbated when breakup coincides with snowmelt or rainfall.

7.1.3 Pluvial (Ponding) Flooding

Pluvial flooding occurs when rainfall or snowmelt accumulates in flat or poorly drained areas where runoff cannot be conveyed efficiently. This type of flooding is common in portions of the Tanana Valley floor, developed areas with limited stormwater infrastructure, and locations with permafrost-affected soils. Floodwaters may persist until they infiltrate, evaporate, or are mechanically drained.

7.1.4 Winter and Aufeis Flooding

Winter flooding, including aufeis formation, occurs when groundwater or spring-fed streams continue to discharge beneath ice-covered channels. When flow is obstructed by ice, water spreads laterally and freezes in layers, creating ice accumulations that can flood roads, properties, and infrastructure. This type of flooding is least predictable and is most notably observed in areas such as the Salcha region.

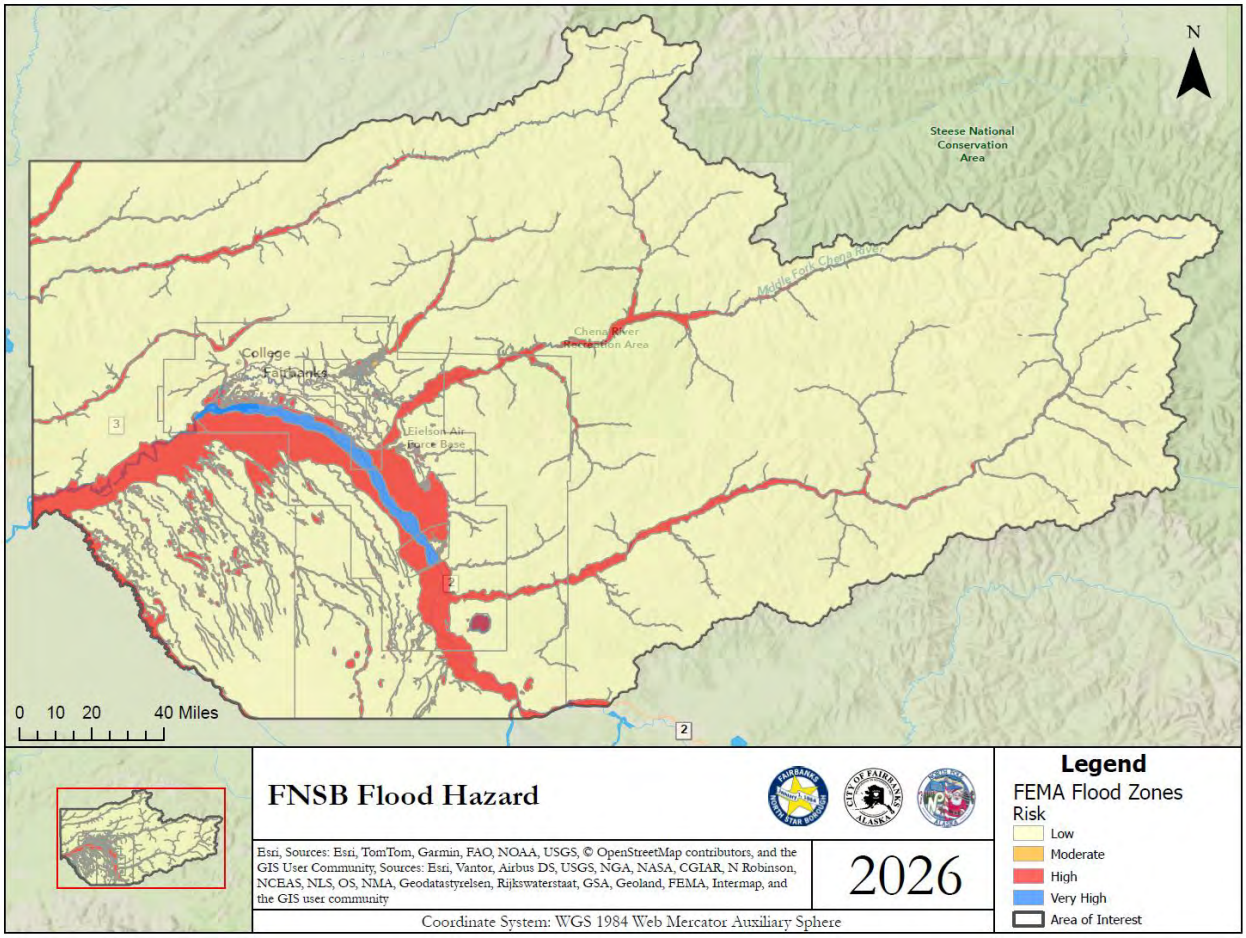
7.1.5 Streambank Erosion and Channel Migration

Flooding in the FNSB is closely linked to streambank erosion and channel migration, particularly along the Tanana and Chena Rivers. High-flow events can erode banks, deposit sediment, and alter channel alignment over time. While these processes are natural, development within floodplains and migration corridors increases the risk of property loss and infrastructure damage. Channel migration can occur gradually or rapidly during flood events, underscoring the importance of land-use planning and development setbacks in flood-prone areas.

Figures 7-1 and 7-2 illustrate the spatial distribution of flood hazard areas within the Borough, including both borough-wide and urban-scale flood-risk conditions, based on current mapping and locally maintained GIS datasets.

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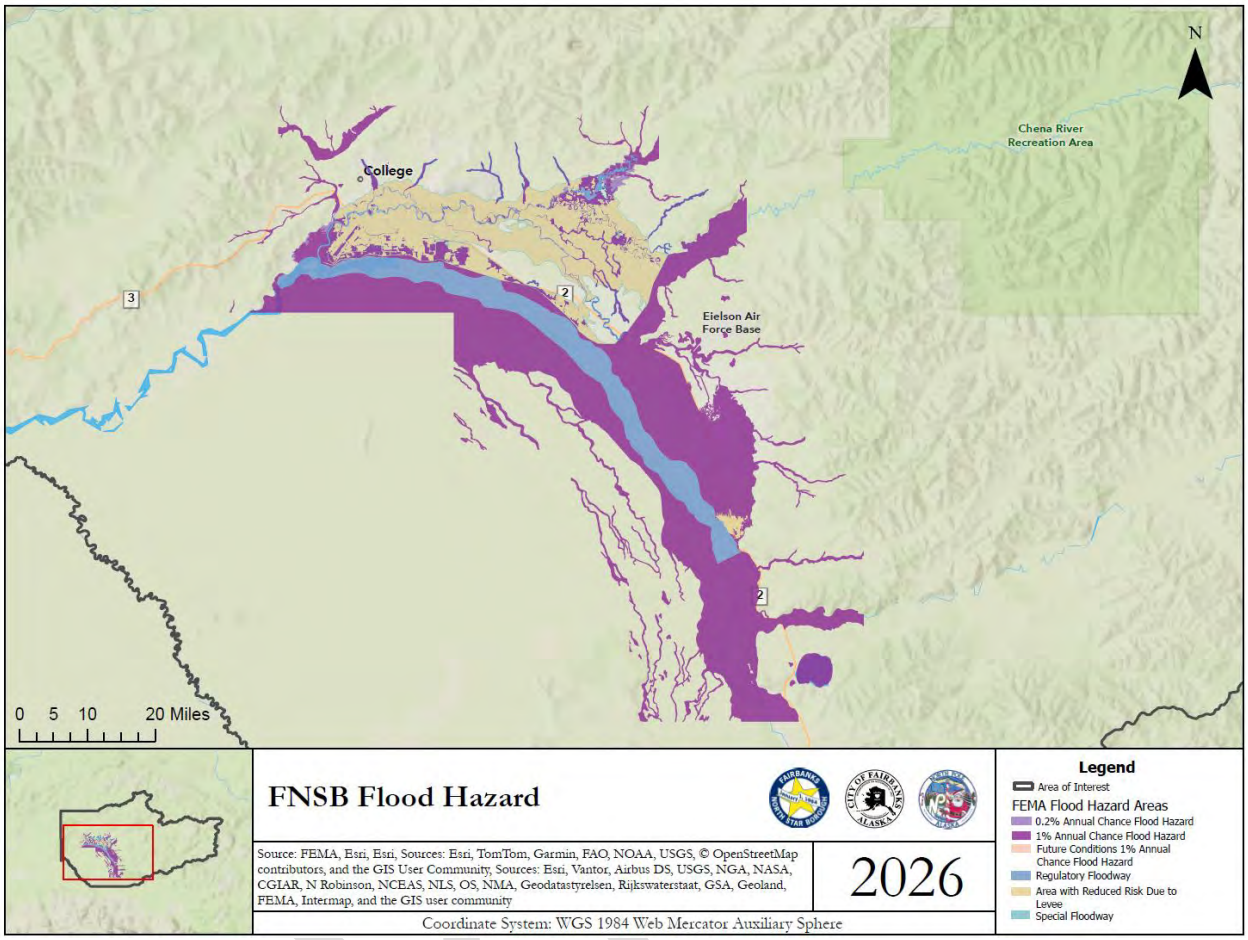
Figure 7-1: Map of Flood Hazard Extent - Borough



Source: Fairbanks North Star Borough Flood Hazard Map

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Figure 7-2: Map of Flood Hazard Extent - Urban Core



Source: Fairbanks North Star Borough Flood Hazard Map

Figures 7-1 and 7-2 demonstrate that flood hazards are concentrated along major river systems, including the Tanana and Chena Rivers, as well as in low-lying and developed areas within the urban core. These patterns indicate that both rural and urban areas are exposed to flooding risks, with increased potential for impacts to infrastructure, development, and transportation systems where floodplains overlap with populated areas and critical facilities. The alignment of development within these flood-prone areas also increases the potential for streambank erosion and channel migration to directly affect structures and infrastructure over time.

7.2 Historical Occurrence

Flooding has influenced settlement patterns, infrastructure investment, and emergency management planning in the FNSB for more than a century. Early development occurred directly within river floodplains and ice-affected channels, resulting in repeated flood

damage driven by ice jams, snowmelt, and rainfall prior to the construction of major flood control infrastructure.[342]

7.2.1 Early Flooding and Ice Jam Events (1905–1947)

Some of the earliest documented flood events in Fairbanks were caused by ice jams and streambank erosion along the Chena River. In 1905, an ice dam formed during spring breakup when debris from a collapsed upstream bridge lodged against a downtown bridge, blocking the flow of ice and causing flooding along First Avenue. Streambank erosion removed approximately 50 feet of land in places, and the bridge was ultimately dynamited to release floodwaters.[343]

In 1911, an ice jam on the Chena River forced thick ice and debris into developed areas, destroying buildings in the Garden Island subdivision and causing an estimated $50,000 in damage. These early events demonstrated the rapid onset and destructive potential of ice-related flooding in the Interior.[344]

Rainfall-driven flooding also occurred during this period. In 1930, heavy rainfall flooded downtown Fairbanks along First Avenue west to Cowles Street, reinforcing the Borough's exposure to open-water flooding during wet periods.[345]

7.2.2 Major Floods and Early River Engineering (1938–1966)

Following years of recurring floods, including the significant flood of 1937, the Moose Creek Dike was constructed between 1938 and 1941 as the first major river re-engineering project in the Fairbanks area. The dike was designed to prevent floodwater from a Tanana River slough from entering the Chena River and inundating downtown Fairbanks. Construction of the dike reduced Chena River flows through the city by approximately 75 percent and relocated the river's confluence to its present-day location south of FIA.[346]

[342] Fairbanks North Star Borough. Historical flood records and emergency management documentation.

[343] Fairbanks North Star Borough. Historical flood records and emergency management documentation. National Weather Service (NWS), Fairbanks Forecast Office. Flood event summaries, ice jam records, and hydrologic observations.

[344] Fairbanks North Star Borough. Historical flood records and emergency management documentation. National Weather Service (NWS), Fairbanks Forecast Office. Flood event summaries, ice jam records, and hydrologic observations.

[345] Fairbanks North Star Borough. Historical flood records and emergency management documentation.

[346] U.S. Army Corps of Engineers (USACE). *Chena River Lakes Flood Control Project* history and operational summaries.

Despite these early mitigation efforts, severe flooding continued. In 1948, Fairbanks experienced the second-largest flood of record, inundating approximately 30 percent of the city. The most catastrophic flood in the community's history occurred in August 1967, when prolonged and near-continuous rainfall caused widespread inundation. Approximately 95 percent of Fairbanks was flooded for several days, resulting in more than $170 million in damage, nearly 6,000 damaged homes, extensive evacuations, and eight fatalities. This event remains the historical flood of record for the Borough.[347]

7.2.3 Construction of the Chena River Lakes Flood Control Project (1968–1979)

In response to the 1967 flood and similar events nationwide, Congress authorized the Chena River Lakes Flood Control Project under the Flood Control Act of 1968. Constructed between 1973 and 1979, the project includes Moose Creek Dam, a floodway, and a levee-and-groin system along the Tanana River south of Fairbanks.[348]

When the Chena River approaches flood stage, gates at Moose Creek Dam are lowered to divert floodwaters south through the floodway and into the Tanana River, effectively bypassing downtown Fairbanks. Since becoming operational, the project has significantly reduced flood damage in central Fairbanks; however, system operation can produce secondary impacts, including elevated groundwater levels downstream and flooding in other areas of the Borough.[349]

7.2.4 Post-Project Flood Events (1992–Present)

Flooding has continued to occur in the FNSB since completion of the flood control project, though impacts have generally been reduced in downtown Fairbanks. In May 1992, rainfall on a heavy snowpack caused a major runoff event. Moose Creek Dam was operated for 17 days, impounding water up to 23 feet deep over more than 7,200 acres

[347] Fairbanks North Star Borough. Historical flood records and emergency management documentation. National Weather Service (NWS), Fairbanks Forecast Office. Flood event summaries, ice jam records, and hydrologic observations.

[348] U.S. Army Corps of Engineers (USACE). *Chena River Lakes Flood Control Project* history and operational summaries.

[349] U.S. Army Corps of Engineers (USACE). *Chena River Lakes Flood Control Project* history and operational summaries.

of the floodway. While the project functioned as designed, elevated groundwater levels damaged more than 90 homes in the North Pole area.[350]

Significant flooding occurred again in April–May 2002, when heavy rainfall on snowpack caused washouts along the Steese Highway near the Chatanika River. That spring, breakup-related flooding and glacial runoff also affected the community of Salcha, resulting in a Major Disaster Declaration (DR-1423-AK). Ice jam flooding persisted through the winter of 2002–2003, causing prolonged impacts in Salcha and nearby areas.[351]

In September 2008, intense rainfall caused record-high water levels across the Tanana Valley Drainage, flooding areas including Salcha, Rosie Creek, Perkins Landing, and Lower Chena Pump Road. Approximately 300 homes were damaged, and the event resulted in a Presidential Disaster Declaration (DR-1796-AK). Ice jam flooding in 2009 again impacted Salcha, prompting another disaster declaration (DR-1843-AK).[352]

More recent events illustrate the continuing flood hazard across the Borough. Ice jam flooding along the Tanana River affected Salcha in 2011 and 2013, damaging properties and infrastructure. Rainfall-driven flooding occurred in 2014, 2015, 2016, 2018, and 2019, with multiple closures of Moose Creek Dam to manage Chena River flows. In 2020, a dynamic breakup of the Chena River caused ice jam flooding in downtown Fairbanks and along Chena Hot Springs Road, followed by rapid snowmelt that brought the Chena, Salcha, and Chatanika Rivers to flood stage. The flood control project was operated multiple times in spring 2020 to prevent flooding in downtown.[353]

These events demonstrate that while flood control infrastructure has significantly reduced flood damages in central Fairbanks, flooding remains a recurring hazard across the

[350] U.S. Army Corps of Engineers (USACE). *Chena River Lakes Flood Control Project* history and operational summaries. Fairbanks North Star Borough; City of North Pole. Post-1992 groundwater flooding impact documentation.

[351] National Weather Service (NWS), Fairbanks Forecast Office. Flood event summaries, ice jam records, and hydrologic observations. Federal Emergency Management Agency (FEMA). Disaster Declarations DR-1423-AK, DR-1796-AK, and DR-1843-AK.

[352] National Weather Service (NWS), Fairbanks Forecast Office. Flood event summaries, ice jam records, and hydrologic observations. Federal Emergency Management Agency (FEMA). Disaster Declarations DR-1423-AK, DR-1796-AK, and DR-1843-AK.

[353] National Weather Service (NWS), Fairbanks Forecast Office. Flood event summaries, ice jam records, and hydrologic observations. U.S. Army Corps of Engineers (USACE). *Chena River Lakes Flood Control Project* history and operational summaries.

Borough, particularly from ice jams, groundwater rise, and flooding in communities outside the primary protection areas as illustrated in Figure 7-3.[354]

Figure 7-3: Ice Jam on the Chena River near Front Street, Downtown Fairbanks (April 23, 2020)



Source: National Weather Service Fairbanks; Pro Music Webcam

Figure 7-3 illustrates ice jam flooding conditions along the Chena River in downtown Fairbanks during the 2020 breakup event. This image demonstrates how ice can rapidly obstruct river flow, leading to localized flooding in developed areas, including locations otherwise protected by flood control infrastructure. These conditions highlight the limitations of structural flood control measures in addressing ice jam flooding and groundwater-related impacts across the Borough.

7.3 Extent

Extent describes the severity or magnitude of a hazard, including the intensity, geographic scale, and potential level of impact on the planning area. The extent of floods within the FNSB varies based on location, seasonal conditions, and specific event characteristics.

Extent of flooding within the planning area is influenced by riverine flooding along the Chena and Tanana Rivers, ice jam events, and localized drainage limitations. Flood extent may range from nuisance flooding affecting roads and low-lying areas to more severe

[354] Fairbanks North Star Borough. Historical flood records and emergency management documentation. U.S. Army Corps of Engineers (USACE). *Chena River Lakes Flood Control Project* history and operational summaries.

events impacting structures, infrastructure, and critical facilities within mapped floodplains. Flood depth, duration, and velocity vary by location and event conditions.

In the FNSB, flood extent may include water depths ranging from minor roadway inundation of less than one foot to several feet of flooding affecting structures and infrastructure within flood-prone areas. Major historical events, including the 1967 flood, demonstrated the potential for widespread inundation across a large portion of the developed area, while more recent flood events have resulted in localized but significant impacts on communities along the Tanana, Chena, and Salcha River systems. Ice jam flooding can produce rapid, high-depth flooding with little warning, while prolonged high-water conditions may result in multi-day or multi-week inundation, groundwater rise, and extended impacts to structures, utilities, and transportation systems across the Borough. Flood extent within the Borough is influenced by the operation and limitations of flood control infrastructure, including Moose Creek Dam and associated levee systems, which reduce but do not eliminate flood risk and may contribute to secondary impacts such as groundwater rise and localized flooding outside primary protection areas.

Extent is further illustrated through hazard mapping and exposure analysis presented in Chapter 4.

7.4 Possible Impacts from Future Events

Future flood events in the FNSB have the potential to cause significant physical damage, economic disruption, and life-safety impacts, particularly when flooding occurs outside primary protection areas or overwhelms local drainage and groundwater systems. Flood impacts may result from water inundation, high-velocity flows, debris accumulation, ice processes, and elevated groundwater levels, depending on flood type and location.[355]

Flooding can damage structures through direct inundation, debris impacts, and erosion or scouring of roadways, foundations, footings, streambanks, and bridge supports. Even when river flows are controlled or diverted by flood control infrastructure, flood events may still raise the groundwater table, resulting in basement flooding, utilidor inundation, and impacts to septic systems and wells, particularly in low-lying or poorly drained areas.[356]

[355] National Weather Service (NWS), Fairbanks Forecast Office. Flood impacts, ice jam behavior, erosion, and hydrologic hazard summaries for Interior Alaska.

[356] National Weather Service (NWS), Fairbanks Forecast Office. Flood impacts, ice jam behavior, erosion, and hydrologic hazard summaries for Interior Alaska. Fairbanks North Star Borough Emergency Management; Alaska DHS&EM. Flood response, infrastructure impacts, and economic disruption documentation.

Floodwater may also mobilize hazardous materials, petroleum products, and sewage if storage facilities, fuel tanks, or wastewater systems are inundated. These releases can pose risks to public health, contaminate soil and surface waters, and complicate cleanup and recovery efforts. Navigation and transportation can be affected by rising river levels, reducing clearance under bridges and damaging river crossings, docks, and access roads.[357]

The economic consequences of flooding can be substantial. Utility services, businesses, communications facilities, and government operations may experience prolonged disruption due to damaged infrastructure, restricted access, or loss of critical services. Because the FNSB serves as a regional transportation and service hub for Interior Alaska, flooding that compromises highways, rail lines, or airport access can affect communities well beyond the Borough by disrupting supply chains, freight movement, and access to healthcare and essential goods.[358]

Flood control infrastructure, including Moose Creek Dam and the Chena River Lakes Flood Control Project, has significantly reduced flood damages within much of urban Fairbanks by diverting floodwaters away from the city during high-flow events. However, these systems are designed for flood control rather than flood prevention, and flooding can still occur within the broader, more complex floodplain associated with the Tanana River, due to ice jams, extreme hydrologic events, groundwater rise, or flooding in areas outside protected zones.[359]

As future flood events occur, the most severe impacts are expected where multiple factors interact, such as ice jams combined with snowmelt or rainfall, prolonged high-water levels, or flooding coinciding with power outages or transportation disruptions. These

[357] National Weather Service (NWS), Fairbanks Forecast Office. Flood impacts, ice jam behavior, erosion, and hydrologic hazard summaries for Interior Alaska. U.S. Army Corps of Engineers (USACE). *Chena River Lakes Flood Control Project* operational summaries and flood impact analyses.

[358] Fairbanks North Star Borough Emergency Management; Alaska DHS&EM. Flood response, infrastructure impacts, and economic disruption documentation. University of Alaska Fairbanks; Alaska Climate Research Center (ACRC). Regional transportation, supply chain, and infrastructure vulnerability to flooding in Interior Alaska.

[359] U.S. Army Corps of Engineers (USACE). *Chena River Lakes Flood Control Project* operational summaries and flood impact analyses. Federal Emergency Management Agency (FEMA). Flood hazard guidance, residual risk behind flood control infrastructure, and NFIP risk communication materials.

compound conditions can extend recovery timelines, strain emergency response capabilities, and increase long-term economic and social impacts across the Borough.[360]

7.5 Recurrence Probability of Future Events

The recurrence probability of flooding within the FNSB remains moderate to high, depending on location, flood mechanism, and the presence or absence of flood control infrastructure. While the likelihood of large-scale riverine flooding affecting much of the City of Fairbanks has been significantly reduced through operation of Moose Creek Dam and the Chena River Lakes Flood Control Project, flood events continue to occur regularly in communities outside primary protection areas, particularly along the Tanana River and its tributaries.[361]

Communities such as Salcha, along with other rural neighborhoods within the Tanana River floodplain, experience recurring flood risk from ice jams, snowmelt, rainfall, and winter flooding, with some areas affected during multiple years or seasons. Ice jam formation along the Tanana River and its tributaries remains a persistent and difficult-to-predict hazard, resulting in repeated flooding in Salcha, Rosie Creek, and Chatanika areas.[362]

In portions of the Borough east of Fort Wainwright, new low-density residential development has expanded into areas susceptible to elevated groundwater levels associated with impoundment of the Chena River during flood control operations at Moose Creek Dam. Groundwater flooding has also been identified as a principal flood mechanism in South Fairbanks for areas landward of the Tanana River Levee System. Although the levee has been formally accredited by FEMA, groundwater seepage beneath the levee

[360] National Weather Service (NWS), Fairbanks Forecast Office. Flood impacts, ice jam behavior, erosion, and hydrologic hazard summaries for Interior Alaska. University of Alaska Fairbanks; Alaska Climate Research Center (ACRC). Regional transportation, supply chain, and infrastructure vulnerability to flooding in Interior Alaska.

[361] National Weather Service (NWS), Fairbanks Forecast Office. Flood recurrence, ice jam behavior, and hydrologic variability for Interior Alaska. U.S. Army Corps of Engineers (USACE); Fairbanks North Star Borough. *Chena River Lakes Flood Control Project* operations and groundwater impact documentation.

[362] National Weather Service (NWS), Fairbanks Forecast Office. Flood recurrence, ice jam behavior, and hydrologic variability for Interior Alaska. Alaska Railroad Corporation; Alaska DHS&EM. Salcha levee construction and Tanana River bridge ice-mitigation project documentation.

can still occur during periods of high Tanana River stage, contributing to recurring flood impacts even in mapped Zone X areas.[363]

Flood recurrence in the Borough is further influenced by streambank erosion and channel migration along the Tanana and Chena Rivers. While these processes are natural components of river systems, they increase flood risk where development has occurred near channel margins or within migration corridors. Ongoing erosion has been observed along both river systems, though not all migration zones have been formally mapped. Development of a Channel Migration Zone (CMZ) overlay would improve risk awareness by identifying areas subject to lateral channel movement and recurring flood-related impacts.[364]

Flood control measures have been implemented in some high-risk areas to reduce the recurrence of impacts. In 2017, the ARRC constructed a levee along the Tanana River in Salcha and replaced the Tanana River bridge with piers designed to reduce ice accumulation and promote breakup. While these measures reduce local risk, they do not eliminate the potential for future flooding during extreme hydrologic or ice conditions.[365]

Climate analyses for Interior Alaska indicate high interannual variability in precipitation, with recent periods exhibiting above-average rainfall. Increases in heavy precipitation events may elevate flood recurrence potential, particularly where rainfall coincides with snowmelt, frozen ground, or ice processes. While the exact timing and location of future flood events cannot be predicted, flooding should be expected to recur periodically across the Borough, especially in areas not fully protected by existing flood control infrastructure, as illustrated in Figure 7-4.[366]

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[363] U.S. Army Corps of Engineers (USACE); Fairbanks North Star Borough. *Chena River Lakes Flood Control Project* operations and groundwater impact documentation. Federal Emergency Management Agency (FEMA). Tanana River Levee System accreditation under 44 CFR §65.10 and residual flood risk guidance.

[364] National Weather Service (NWS), Fairbanks Forecast Office. Flood recurrence, ice jam behavior, and hydrologic variability for Interior Alaska. Fairbanks North Star Borough; Alaska Department of Natural Resources. River erosion, channel migration observations, and floodplain management considerations.

[365] Alaska Railroad Corporation; Alaska DHS&EM. Salcha levee construction and Tanana River bridge ice-mitigation project documentation.

[366] University of Alaska Fairbanks, SNAP / Alaska Climate Research Center (ACRC). Precipitation variability and flood-risk implications for Interior Alaska.

Figure 7-4: Average Monthly Precipitation for Fairbanks, Alaska



Source: Scenarios Network for Alaska + Arctic Planning, University of Alaska Fairbanks.

Figure 7-4 illustrates average monthly precipitation patterns in the Fairbanks area. This pattern indicates seasonal variability in precipitation, with periods of increased precipitation contributing to elevated flood potential, particularly when combined with snowmelt, frozen ground conditions, or ice processes.

These seasonal precipitation patterns contribute to compound flood conditions when rainfall occurs concurrently with snowmelt, frozen ground, or ice jam processes, increasing both the likelihood and severity of flood events.

7.6 NFIP Participation

The National Flood Insurance Program (NFIP) was established by the National Flood Insurance Act of 1968 to reduce flood losses through a combination of flood insurance availability, floodplain management standards, and hazard mapping. Participation in the NFIP enables property owners to obtain federally backed flood insurance while requiring

participating communities to adopt and enforce floodplain management regulations designed to reduce future flood damages.[367]

The FNSB administers the NFIP for the entire Borough, including the City of Fairbanks and the City of North Pole. The Borough was one of the earliest communities nationwide to join the NFIP, entering the program in 1969. Continued participation in the NFIP is critical for maintaining eligibility for flood insurance, certain federal disaster assistance programs, and hazard mitigation funding.[368]

As of the most recent available NFIP policy and claims data, the FNSB had 657 active flood insurance policies insuring approximately $169 million in property value. Since 1978, a total of 227 flood insurance claims have been filed within the Borough, with cumulative paid losses exceeding $2 million, representing the highest NFIP claim totals statewide. These data reflect both the Borough's exposure to flood hazards and the long-term value of NFIP participation in facilitating recovery following flood events.[369]

Flood hazard identification within the Borough is supported by Flood Insurance Rate Maps (FIRMs), which delineate SFHAs and establish regulatory floodplain boundaries. Many FNSB FIRMs were comprehensively revised in January 1992 following the completion of the Moose Creek Flood Control Project, which introduced a regulatory floodway for significant portions of the Chena River through urban Fairbanks. Subsequent updates, including FEMA Risk MAP efforts and recent levee accreditation actions, continue to refine the representation of flood hazards across the Borough.[370]

Flood hazard mapping within the Borough has been updated incrementally over time to reflect changes in flood risk, infrastructure, and regulatory requirements. Digital Flood Insurance Rate Maps (dFIRMs) for portions of the Borough became effective in 2014 following FEMA Map Modernization and Risk MAP efforts, including updates to South Fairbanks. Additional map revisions were adopted in 2020 to address localized flood hazards and updated engineering analyses. These prior updates form the regulatory

[367] Federal Emergency Management Agency (FEMA). *National Flood Insurance Program Overview* and National Flood Insurance Act of 1968.

[368] Fairbanks North Star Borough. Floodplain management program records and NFIP participation documentation.

[369] Fairbanks North Star Borough. Floodplain management program records and NFIP participation documentation. Federal Emergency Management Agency (FEMA). NFIP Policy and Claims Reports; Repetitive Loss Property listings for Alaska.

[370] Federal Emergency Management Agency (FEMA). Flood Insurance Rate Maps (FIRMs), regulatory floodway guidance, and Risk MAP documentation for FNSB. FEMA Region 10; U.S. Army Corps of Engineers (USACE). Tanana River Levee System accreditation and recent flood study/map update documentation.

baseline under Title 15, upon which the current Tanana River and Zone A Physical Map Revision (PMR) flood study builds.[371]

Building on these prior map updates, FEMA's Tanana River and Zone A PMR Flood Study had progressed through the Preliminary and appeal phases, with no appeals received, and was advancing toward final FIRM issuance and adoption. Concurrently, flood-control infrastructure improvements and levee-related documentation for the Moose Creek Dam and Tanana River systems were being finalized in coordination with the U.S. Army Corps of Engineers (ACOE), the FNSB, and FEMA. Final flood hazard mapping and regulatory requirements will take effect following issuance of the Letter of Final Determination (LFD) and completion of the required map adoption process.[372]

While the Moose Creek Flood Control Project reduces flood risk along the Chena River, many developed areas within the Borough remain mapped as approximate Zone A floodplains, particularly outside primary protection areas. These areas are subject to continued flood risk and rely on floodplain management standards, permitting, and public awareness to reduce future losses. Recent and ongoing flood studies and map updates reflect changes in development patterns, hydrology, and flood control infrastructure, underscoring the dynamic nature of flood risk within the FNSB.[373]

7.6.1 Repetitive Loss Properties

According to the most recent NFIP Repetitive Loss (RL) property inventory, there are 25 repetitive loss properties within the FNSB. A repetitive loss property is defined as a structure that has experienced two or more flood insurance claim payments exceeding $1,000 within any rolling ten-year period. These properties represent a disproportionate share of NFIP claims and losses nationwide.[374]

Of the identified repetitive loss properties in the Borough, seven have been mitigated through acquisition, elevation, or other mitigation actions. Several of these properties were acquired by the FNSB using funding from the HMGP and the NRCS, with structures

[371] Federal Emergency Management Agency (FEMA). Flood Insurance Rate Maps (FIRMs), regulatory floodway guidance, and Risk MAP documentation for FNSB. Fairbanks North Star Borough. Floodplain Management Ordinance (Title 15) adoption records and FEMA DFIRM effective dates (2014, 2020).

[372] Federal Emergency Management Agency (FEMA); STARR II. *Tanana River and Zone A Physical Map Revision (PMR) Flood Study Quarterly Reports* (2025–2026).

[373] Federal Emergency Management Agency (FEMA). Flood Insurance Rate Maps (FIRMs), regulatory floodway guidance, and Risk MAP documentation for FNSB. FEMA Region 10; U.S. Army Corps of Engineers (USACE). Tanana River Levee System accreditation and recent flood study/map update documentation.

[374] Federal Emergency Management Agency (FEMA). NFIP Policy and Claims Reports; Repetitive Loss Property listings for Alaska.

removed and the parcels converted to open space. Updated documentation has been submitted to the Insurance Services Office to reflect the mitigated status of these properties.[375]

The remaining repetitive loss properties include residential structures, properties affected by infrastructure projects, and locations subject to persistent flood mechanisms such as groundwater rise or ice jam flooding. Continued mitigation of repetitive loss properties remains an important strategy for reducing long-term flood damages and minimizing strain on the National Flood Insurance Fund.[376]

7.6.2 Floodplain Management

Floodplain management within the FNSB is administered through the Borough's Floodplain Administrator, whose responsibilities include maintaining NFIP compliance, reviewing development proposals within flood hazard areas, issuing permits, and enforcing floodplain management regulations. These activities are conducted under Title 15 of the FNSB Code, which establishes standards for development within SFHAs based on NFIP requirements.[377]

In addition to regulatory enforcement, floodplain management efforts support public education and risk awareness, helping residents and property owners understand flood hazards, insurance requirements, and mitigation options. Through continued NFIP participation, updated flood mapping, and coordination with state and federal partners, the FNSB seeks to reduce flood risk while supporting resilient development across the Borough.[378]

7.6.3 High Hazard Potential Dams and Flood Control Structures

High Hazard Potential Dams (HHPDs) are defined by the potential consequences of failure, in which failure or misoperation would likely result in loss of life and significant

[375] Fairbanks North Star Borough; Alaska DHS&EM. Hazard Mitigation Grant Program (HMGP) and NRCS-funded flood mitigation project records.

[376] Federal Emergency Management Agency (FEMA). NFIP Policy and Claims Reports; Repetitive Loss Property listings for Alaska. Fairbanks North Star Borough; Alaska DHS&EM. Hazard Mitigation Grant Program (HMGP) and NRCS-funded flood mitigation project records.

[377] Fairbanks North Star Borough. Floodplain management program records and NFIP participation documentation. Federal Emergency Management Agency (FEMA). Flood Insurance Rate Maps (FIRMs), regulatory floodway guidance, and Risk MAP documentation for FNSB.

[378] Fairbanks North Star Borough. Floodplain management program records and NFIP participation documentation. FEMA Region 10; U.S. Army Corps of Engineers (USACE). Tanana River Levee System accreditation and recent flood study/map update documentation.

property damage. Within the FNSB, key water control and dam-related infrastructure includes the Chena River Flood Control Project (including Moose Creek Dam and flood control structures) operated by the U.S. Army Corps of Engineers (USACE), and the Fort Knox Mine tailings storage facility, which is regulated by the State of Alaska and operated by Kinross Fort Knox.

The planning team coordinated with the U.S. Army Corps of Engineers on the Chena River Flood Control Project, including the operation of the Moose Creek Dam and associated levee and flood-control structures. The planning team also coordinated with Fort Knox Mine representatives regarding the tailings storage facility. Information from these entities, including operational considerations, hazard potential, and flood risk context, was incorporated into the hazard mitigation planning process.

Available information from USACE and the Fort Knox Mine, as well as relevant state regulatory information, was reviewed and considered in developing the flood hazard profile and risk assessment.

7.7 Long-Term Mitigation Projects

Long-term flood mitigation within the FNSB relies on a combination of structural flood-control infrastructure, regulatory floodplain management, public outreach, and continual improvement of flood-hazard mapping and modeling. These measures collectively reduce flood damages, guide development away from high-risk areas, and support informed decision-making for future growth.[379]

7.7.1 Chena River Lakes Flood Control Project

The Chena River Lakes Flood Control Project is the cornerstone of flood mitigation for the Cities of Fairbanks and North Pole, Fort Wainwright Army Base, and Fairbanks International Airport. Authorized by Congress in the Flood Control Act of August 13, 1968, the project was constructed between 1973 and 1979 and consists of three primary components: Moose Creek Dam and floodway, the Tanana River levee system, and a network of interior drainage channels.[380]

Moose Creek Dam and the associated floodway are designed to limit Chena River flows to approximately 12,000 cubic feet per second (cfs) through downtown Fairbanks during high-flow events. When river stages approach flood levels, the dam's gates are lowered to divert excess flow south through a seven-mile floodway to the Tanana River. The

[379] Fairbanks North Star Borough. Flood mitigation planning documents and emergency management records.

[380] U.S. Army Corps of Engineers (USACE). *Chena River Lakes Flood Control Project* design, construction, and operational documentation.

floodway conveys diverted water beneath the Richardson Highway and Alaska Railroad bridges and over a sill structure into the Tanana River, which has substantially greater flow capacity.[381]

The Tanana River levee system, extending approximately 22 miles downstream from the floodway intersection to the mouth of the Chena River, provides flood risk reduction for the urban areas of Fairbanks and Fort Wainwright. In addition, a system of interior drainage and seepage-collector channels intercepts groundwater and seepage that percolate beneath the dam and levees, reducing interior flooding during prolonged high-water events. While the project has significantly reduced flood damage in protected areas, it is designed for flood control rather than prevention, and flooding can still occur outside the protection footprint or through mechanisms such as groundwater rise and ice jams.[382]

7.7.2 Floodplain Regulations (Title 15)

Regulatory floodplain management is a critical long-term mitigation tool. To maintain eligibility in the NFIP, the FNSB has adopted and enforces Title 15, the Borough's floodplain management regulations. Title 15 establishes minimum development standards within SFHAs, including elevation, construction, and permitting requirements consistent with FEMA regulations. The ordinance was comprehensively revised in April 2010 to align with updated FEMA standards and to strengthen permitting, enforcement, and compliance processes.[383]

7.7.3 Public Outreach and Risk Awareness

The Borough supports long-term flood mitigation through public outreach and education to increase flood hazard awareness among residents, property owners, and developers. Outreach activities include participation in the annual Interior Alaska Builders Association (IABA) trade show, direct communication with property owners located within or partially within SFHAs, and reminders regarding floodplain permitting requirements for new and

[381] U.S. Army Corps of Engineers (USACE). *Chena River Lakes Flood Control Project* design, construction, and operational documentation.

[382] U.S. Army Corps of Engineers (USACE). *Chena River Lakes Flood Control Project* design, construction, and operational documentation. Federal Emergency Management Agency (FEMA). Flood control infrastructure residual risk and NFIP guidance.

[383] Fairbanks North Star Borough. Floodplain Management Ordinance (Title 15) and public outreach program records.

existing development. These efforts support informed decision-making and compliance with floodplain regulations, reducing future flood losses.[384]

7.7.4 Flood Mapping, Modeling, and Data Improvements

Ongoing improvements to flood hazard mapping and modeling support long-term mitigation planning across the Borough. The FNSB maintains a robust enterprise GIS containing floodplain, topographic, and land-use data. dFIRMs became effective in 2014, completing the Map Modernization re-study initiated in 2007. Subsequent mapping and modeling efforts continue under FEMA's Risk Mapping, Assessment, and Planning (Risk MAP) program.[385]

Updated Hydrological Engineering Center River Analysis System (HEC-RAS) hydraulic models for the Chena River and groundwater models for the Moose Creek Dam area have been developed and refined by the ACOE. In addition, the NRCS has developed a new hydraulic model for the Chena Slough (formerly Chena-Badger Slough), which can be integrated with high-resolution light detection and ranging (LiDAR) data to improve flood risk assessment. The Borough acquired updated LiDAR coverage for urban and frequently flooded areas in 2023, providing a high-accuracy foundation for future floodplain mapping and mitigation planning.[386]

Together, these long-term mitigation projects and programs form an integrated approach to flood risk reduction in the FNSB, combining engineered controls, regulatory oversight, public engagement, and data-driven planning to reduce vulnerability while acknowledging residual flood risk.[387]

7.8 Recent Letter of Map Revisions (LOMR) and Flood Studies

Several targeted Letters of Map Revision (LOMRs) and flood studies have been completed within the FNSB to refine flood hazard mapping and reflect the effects of flood mitigation infrastructure.

[384] Fairbanks North Star Borough. Floodplain Management Ordinance (Title 15) and public outreach program records.

[385] Federal Emergency Management Agency (FEMA). Flood Insurance Rate Maps (FIRMs), DFIRM effective dates, and Risk MAP documentation for FNSB.

[386] U.S. Army Corps of Engineers (USACE). *Chena River Lakes Flood Control Project* design, construction, and operational documentation. U.S. Army Corps of Engineers; Natural Resources Conservation Service (NRCS). Hydraulic and groundwater modeling updates and LiDAR-supported flood studies.

[387] Fairbanks North Star Borough. Flood mitigation planning documents and emergency management records.

A LOMR for the Alaska Railroad Extension Phase I project evaluated the flood risk-reduction benefits associated with the construction of a new bridge and levee along the Tanana River. As a result of this action, approximately 124 properties were removed from the SFHA, reflecting reduced flood exposure due to engineered improvements.[388]

The Chena Slough Flood Study was completed in 2016, with preliminary flood hazard maps released by FEMA in 2019 and formally adopted by the FNSB in 2020. This study refined floodplain delineations along the Chena Slough (formerly Chena-Badger Slough), resulting in the removal of over 100 properties and approximately 479 structures from the SFHA.[389]

The Tanana River and Zone A PMR Flood Study represents the most comprehensive recent flood mapping effort within the Borough. Preliminary FIRMs and Flood Insurance Study (FIS) products were released in December 2024, followed by a statutory 90-day appeal period that concluded in December 2025 with no appeals received. As of plan development, the study was advancing through the Post-Preliminary phase, with final map issuance pending completion of levee accreditation documentation and issuance of the LFD. Upon adoption, these maps will update flood hazard delineations along the Tanana River and in previously unmapped or Approximate Zone A areas, improving the accuracy of flood risk identification across the Borough.[390]

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[388] Federal Emergency Management Agency (FEMA). Letter of Map Revision for Alaska Railroad Extension Phase I project.

[389] Federal Emergency Management Agency (FEMA); Fairbanks North Star Borough. *Chena Slough Flood Study* and DFIRM adoption records (2019–2020).

[390] Federal Emergency Management Agency (FEMA); STARR II. *Tanana River and Zone A Physical Map Revision (PMR) Flood Study Quarterly Reports* (2024–2026).

8. Seismic Event Hazard Profile

Earthquakes represent a significant natural hazard in the FNSB due to the region's active tectonic setting and history of seismic activity. Seismic events can produce widespread impacts to life safety, critical infrastructure, and essential services through ground shaking, surface deformation, and secondary hazards such as liquefaction and ground failure.

Seismic risk in the Borough is influenced by regional fault systems, local geologic conditions, and the distribution of population and critical infrastructure. Because many earthquakes in Interior Alaska originate from both mapped faults and distributed crustal deformation, strong ground shaking can occur across broad areas.

This chapter describes the nature and location of seismic hazards affecting the FNSB, along with historical occurrences and the characteristics of seismic events that influence potential impacts. This information provides the basis for understanding seismic risk and supporting the development of mitigation strategies presented later in the plan.

8.1 Nature and Location

The FNSB is located within one of the most seismically active regions in the world. Alaska accounts for approximately 11 percent of the world's recorded earthquakes, and three of the six largest earthquakes ever recorded globally occurred within the state. Seismic monitoring and analysis for Alaska are conducted by the AEIC, a partnership among UAF, the USGS, and NOAA.[391]

Seismic activity in Interior Alaska is driven by the collision and interaction of tectonic plates and crustal blocks. The Pacific Plate is moving northwestward beneath southern Alaska, carrying the Yakutat Terrane, a buoyant block of crust that is colliding with and deforming the North American Plate. This collision produces intense crustal compression that extends far inland, generating earthquakes not only along plate boundaries but also across Interior Alaska, including the FNSB.[392]

Earthquakes affecting the Borough may originate from regional fault systems, including the Denali Fault, as well as from distributed crustal deformation within the Interior.

[391] Alaska Earthquake Information Center (AEIC), University of Alaska Fairbanks. Alaska seismicity statistics and monitoring overview.

[392] Alaska Earthquake Information Center (AEIC), University of Alaska Fairbanks. Alaska seismicity statistics and monitoring overview. U.S. Geological Survey (USGS); AEIC. Tectonic setting of Alaska and Interior Alaska crustal deformation.

Because many Interior Alaska earthquakes occur at relatively shallow depths, they can produce strong ground shaking over wide areas, even when the epicenter is some distance from population centers.[393]

The primary hazards associated with earthquakes in the FNSB include ground shaking, surface faulting, ground settlement and liquefaction, and slope failures such as landslides or rock avalanches. The severity of earthquake impacts depends on multiple factors, including earthquake magnitude, distance from the rupture, duration of shaking, local soil conditions, groundwater presence, and building design and construction practices. Soft, unconsolidated, or saturated soils can amplify shaking and increase the likelihood of liquefaction and ground failure.[394]

Ground shaking during a large earthquake may last tens of seconds, and longer durations generally increase the potential for structural damage. Buildings may experience both horizontal and vertical motions, underscoring the importance of seismic-resistant design standards. In Interior Alaska, seismic risk is compounded by cold-region construction challenges, aging infrastructure, and the presence of critical lifelines, including power, fuel, water, and transportation systems, that may be vulnerable to ground deformation.[395]

Earthquake magnitude is measured using the moment magnitude scale, which provides a consistent estimate of the energy released by an earthquake based on fault rupture characteristics. Earthquake impacts at the surface are commonly described using the Modified Mercalli Intensity (MMI) Scale, which characterizes shaking intensity and observed damage. Table 8-1 compares earthquake magnitude and intensity relationships relevant to potential impacts in the Borough.[396]

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[393] U.S. Geological Survey (USGS); AEIC. Tectonic setting of Alaska and Interior Alaska crustal deformation.

[394] U.S. Geological Survey (USGS); AEIC. Tectonic setting of Alaska and Interior Alaska crustal deformation Federal Emergency Management Agency (FEMA); USGS. Earthquake ground shaking, soil amplification, liquefaction, and building response guidance.

[395] Federal Emergency Management Agency (FEMA); USGS. Earthquake ground shaking, soil amplification, liquefaction, and building response guidance.

[396] Alaska Earthquake Information Center (AEIC), University of Alaska Fairbanks. Alaska seismicity statistics and monitoring overview.

Table 8-1: Earthquake Intensity

Earthquake Magnitude	Equivalent Energy in Weight of TNT	Equivalent Energy in **Hiroshima-Size** Atomic Bombs	Mercalli Intensity	Human Observations
4	15 tons	1/1000	II-III	Feels like vibration from a nearby truck
5	477 tons	3/100	IV-V	Small objects are upset, sleepers awaken
6	15,095 tons	1	VI-VII	Difficult to stand, damage to masonry
7	477,335 tons	32	VII-VIII	Widespread panic, some walls fall
8	15,094,673 tons	1006	IX-XI	Wholesale destruction, large landslides
9	477,335,482 tons	31,822	XI-XII	Total damage, waves seen of ground surface

Source: Alaska Earthquake Information Center.

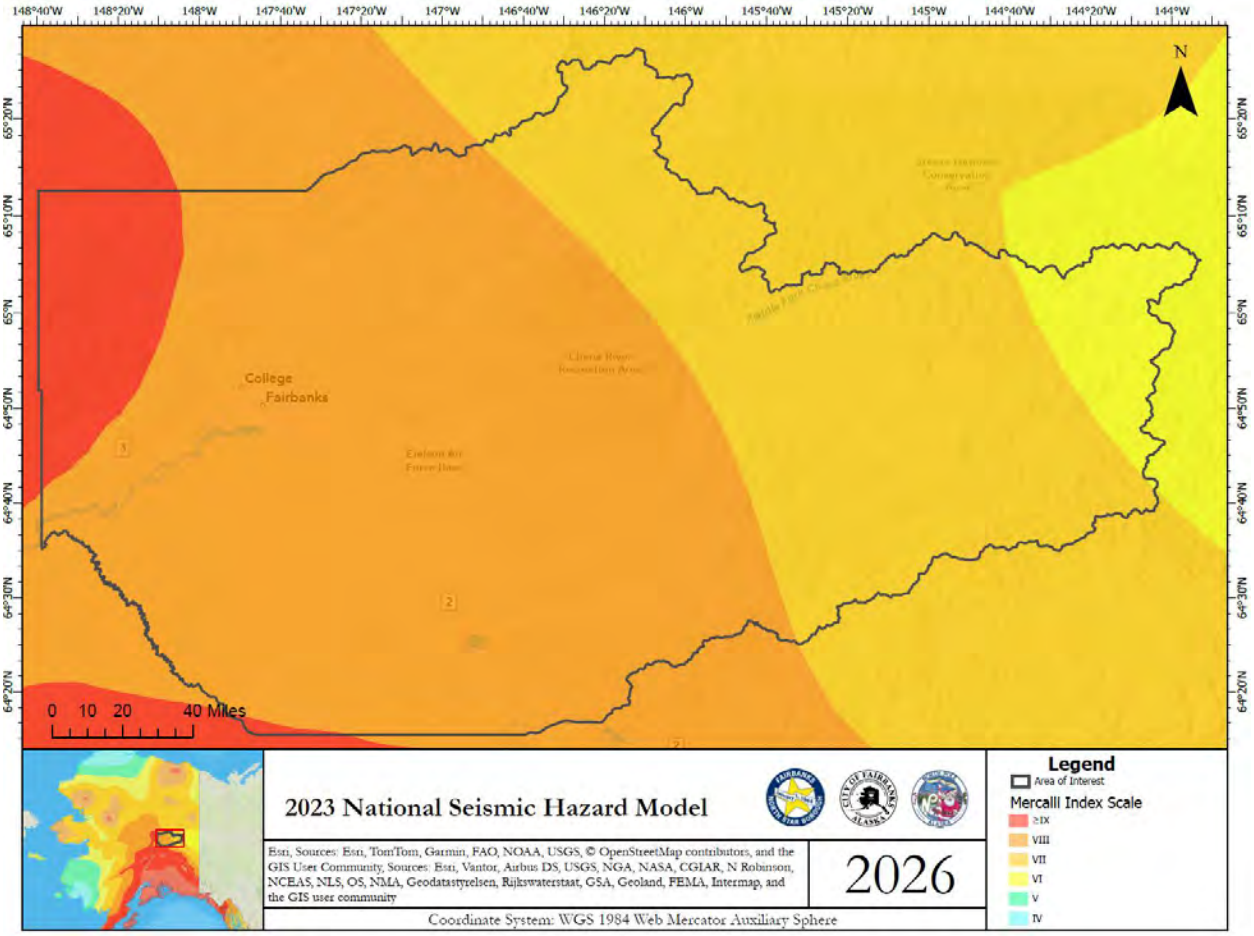
As shown in Table 8-1, increases in earthquake magnitude correspond to exponential increases in energy release and potential damage intensity. For the FNSB, even moderate to large earthquakes (magnitude 6 to 7) have the potential to cause significant structural damage, infrastructure disruption, and life safety impacts, particularly in areas with vulnerable building types or unfavorable soil conditions. These relationships highlight the importance of considering both magnitude and local site conditions when evaluating potential earthquake impacts in the Borough.

Seismic hazard across the FNSB varies spatially based on regional tectonics and distance from major fault systems. According to the 2023 National Seismic Hazard Model, much of the Borough is subject to MMI levels ranging from VI to VIII, indicating the potential for strong to severe shaking during large regional earthquakes. Higher shaking intensities are possible depending on earthquake magnitude, rupturing location, and local soil conditions. Figures 8-1 and 8-2 illustrate the spatial distribution of seismic hazard intensity

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across the Borough and show the relationship between projected ground shaking and the location of population and built structures..[397]

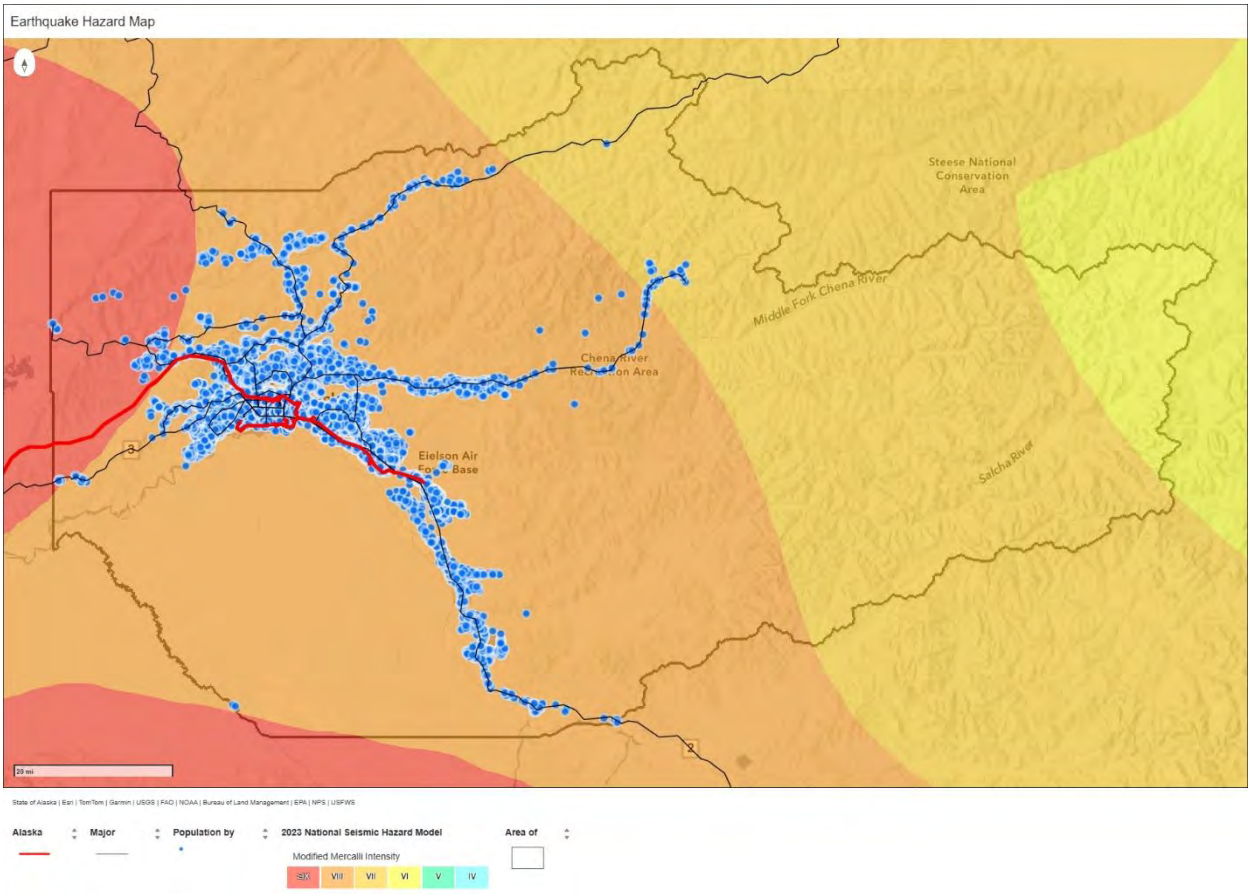
Figure 8-1: Map of Seismic Hazard Intensity – FNSB (Modified Mercalli Intensity)



Source: 2023 National Seismic Hazard Model (USGS); Alaska Earthquake Information Center.

[397] U.S. Geological Survey (USGS). *2023 National Seismic Hazard Model*; Alaska Earthquake Information Center (AEIC).

Figure 8-2: Map of Seismic Hazard Intensity with Population and Structure Overlay - FNSB



Source: 2023 National Seismic Hazard Model (USGS); Fairbanks North Star Borough GIS.

Figures 8-1 and 8-2 demonstrate that areas throughout the Borough are subject to moderate-to-strong seismic shaking, with many developed areas and critical infrastructure located within zones of higher intensity. These patterns indicate that seismic risk in the FNSB is not limited to isolated locations but is broadly distributed, with the potential for widespread impacts to population centers, infrastructure systems, and critical facilities during a major earthquake event.

The overlap of higher seismic hazard areas with population and infrastructure underscores the importance of seismic-resistant design, infrastructure resilience, and emergency preparedness across the Borough.

8.2 Historical Occurrence

Historical earthquake activity affecting the FNSB is comparable to the Alaska statewide average and substantially higher than seismic activity across most of the United States. Earthquake occurrence in Interior Alaska reflects ongoing crustal deformation associated with the Yakutat Terrane collision and regional fault systems, resulting in frequent small

earthquakes and periodic large-magnitude events capable of producing strong ground shaking across the Borough.[398]

8.2.1 Early and Mid-20th Century Earthquakes

Several large earthquakes affected the Interior Alaska region during the early and mid-20th century. On August 27, 1904, a magnitude 7.3 earthquake occurred near Fairbanks, causing buildings to sway and crack and representing one of the largest early recorded earthquakes in Interior Alaska. In July 1912, a magnitude 7.2 earthquake near Paxson was reported as violent in Fairbanks and produced widespread landslides near the Alaska Range.[399]

A magnitude 7.3 earthquake occurred in July 1937 approximately 25 miles southeast of Fairbanks and was felt across much of Interior Alaska. Aftershocks continued for several months, and Fairbanks sustained widespread minor damage. Landslides occurred along the Tanana River, and ground deformation, mud boils, and surface cracking were observed in the surrounding area. In October 1947, a magnitude 7.2 earthquake near the Salcha River fault system caused moderate damage from Fairbanks to Nenana, with landslides reported along the Tanana River corridor.[400]

8.2.2 Seismic Activity and Earthquake Swarms

In addition to large earthquakes, the FNSB has experienced periods of elevated seismic activity and earthquake swarms. A notable swarm occurred in June 1967, when numerous small earthquakes affected the Fairbanks area, producing minor localized damage. Additional swarm activity occurred in 1977 near North Pole along the Badger Road fault, involving thousands of small earthquakes but no significant structural damage. These events illustrate the persistent background seismicity affecting Interior Alaska.[401]

[398] Alaska Earthquake Information Center (AEIC), University of Alaska Fairbanks. Interior Alaska earthquake catalog and historical seismicity summaries.

[399] Alaska Earthquake Information Center (AEIC), University of Alaska Fairbanks. Interior Alaska earthquake catalog and historical seismicity summaries. U.S. Geological Survey (USGS); AEIC. Historical earthquakes affecting Interior Alaska and the Fairbanks region.

[400] Alaska Earthquake Information Center (AEIC), University of Alaska Fairbanks. Interior Alaska earthquake catalog and historical seismicity summaries. U.S. Geological Survey (USGS); AEIC. Historical earthquakes affecting Interior Alaska and the Fairbanks region.

[401] Alaska Earthquake Information Center (AEIC), University of Alaska Fairbanks. Interior Alaska earthquake catalog and historical seismicity summaries.

8.2.3 The 2002 Denali Fault Earthquake

The most significant recent seismic event affecting the region was the November 3, 2002, Denali Fault earthquake, which had a moment magnitude of 7.9 and remains the strongest earthquake ever recorded in Interior Alaska. The earthquake ruptured approximately 209 miles of fault surface along the Denali and Totschunda fault systems, with horizontal offsets reaching 20–22 feet in some locations. Shaking was felt across much of North America, including distant parts of the continental United States.[402]

Fairbanks experienced over three minutes of sustained ground shaking during the Denali Fault earthquake but avoided widespread structural damage due to distance from the rupture and favorable ground motion characteristics. Significant damage occurred to transportation infrastructure, including portions of the Richardson and Parks Highways, with total repair costs exceeding $25 million. The Trans-Alaska Pipeline System, which traverses approximately 89 miles within the Borough, withstood lateral ground displacement of nearly 20 feet without rupture due to engineered fault-crossing design.[403]

8.2.4 Recent Earthquakes (2014–Present)

Since 2002, the FNSB has continued to experience moderate and small earthquakes. In August 2014, earthquakes of magnitude 5.2 and 4.2 occurred in the Minto Flats seismic zone, followed by more than 2,000 aftershocks through the end of the year. Additional earthquakes of magnitude 5.8 to 6.1 occurred along segments of the Denali Fault system between 2015 and 2021, all of which were felt in the Borough but caused little to no reported damage.[404]

Smaller earthquakes, typically below magnitude 4.0, are felt periodically within the Borough, including events near Ester, North Nenana, South Van Horn, North Pole, and

[402] U.S. Geological Survey (USGS); AEIC. Historical earthquakes affecting Interior Alaska and the Fairbanks region. U.S. Geological Survey (USGS). *The 2002 Denali Fault Earthquake*: rupture characteristics, ground motion, and infrastructure impacts.

[403] U.S. Geological Survey (USGS); AEIC. Historical earthquakes affecting Interior Alaska and the Fairbanks region. U.S. Geological Survey (USGS). *The 2002 Denali Fault Earthquake*: rupture characteristics, ground motion, and infrastructure impacts.

[404] Alaska Earthquake Information Center (AEIC), University of Alaska Fairbanks. Interior Alaska earthquake catalog and historical seismicity summaries. U.S. Geological Survey (USGS); AEIC. Historical earthquakes affecting Interior Alaska and the Fairbanks region.

South Fairbanks between 2020 and 2021. While these events generally do not cause damage, they reinforce the ongoing seismic activity affecting the area.[405]

Most recently, the Salcha area experienced a localized earthquake swarm, as documented by the AEIC. Beginning in late 2025 and continuing into early 2026, numerous small-magnitude earthquakes occurred southeast of Fairbanks, primarily in the magnitude 1.5 to 3 range, with several events felt locally. No damage was reported; however, AEIC characterized the activity as a seismic swarm rather than a single mainshock-aftershock sequence. Such swarms are not uncommon in Interior Alaska and reflect ongoing crustal deformation associated with regional fault systems. While swarm activity does not necessarily indicate an impending larger earthquake, it reinforces the persistent and active seismic environment affecting the FNSB.[406]

Review of AEIC and USGS seismic records indicates that, aside from localized swarm activity, no additional damaging earthquakes affected the FNSB between 2021 and 2025.

Overall, the historical record demonstrates that the FNSB is subject to frequent seismic activity and periodic large-magnitude earthquakes capable of producing strong ground shaking, infrastructure damage, and cascading impacts, even when epicenters are located outside the immediate Borough boundaries as illustrated in Figure 8-3.[407]

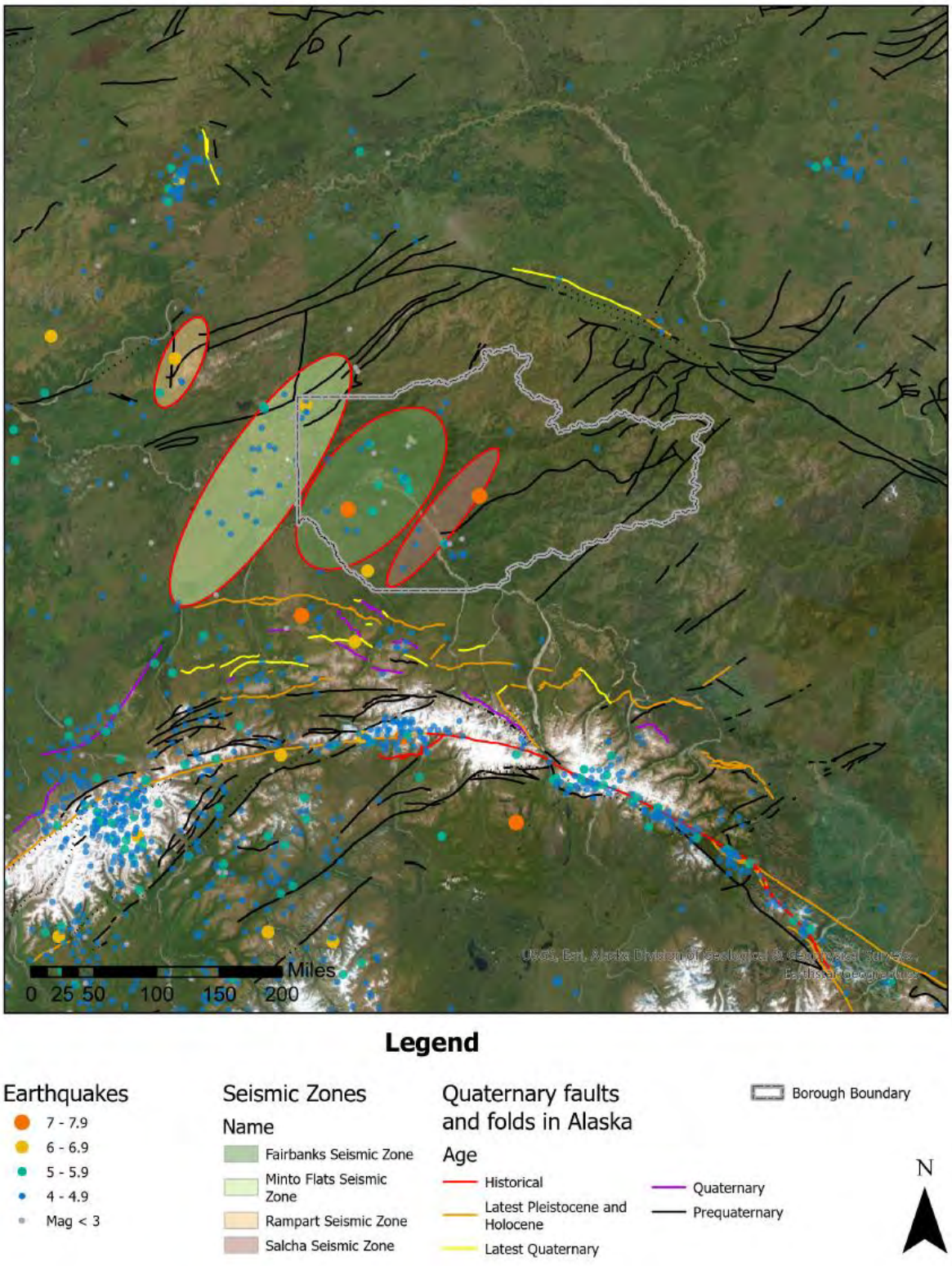
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[405] Alaska Earthquake Information Center (AEIC), University of Alaska Fairbanks. Interior Alaska earthquake catalog and historical seismicity summaries.

[406] Alaska Earthquake Information Center (AEIC), University of Alaska Fairbanks. Interior Alaska earthquake catalog and historical seismicity summaries. Alaska Earthquake Information Center (AEIC), University of Alaska Fairbanks. Interior Alaska earthquake swarm summaries and recent seismicity reports (2025–2026).

[407] Alaska Earthquake Information Center (AEIC), University of Alaska Fairbanks. Interior Alaska earthquake catalog and historical seismicity summaries. U.S. Geological Survey (USGS); AEIC. Historical earthquakes affecting Interior Alaska and the Fairbanks region.

Figure 8-3: Map of Historical Regional Seismicity



Source: Fairbanks North Star Borough GIS, Fairbanks North Star Borough Department of Emergency Operations, Retrieved on 6/4/2026.

Figure 8-3 Note: This figure is provided for historical context; current seismic hazard characterization for the Borough is based on the 2023 National Seismic Hazard Model.

Figure 8-3 illustrates the spatial distribution of historical seismic activity in the region surrounding the Borough. This pattern indicates that seismic events occur across a broad area of Interior Alaska, reinforcing that earthquakes affecting the FNSB may originate both locally and from regional fault systems. The distribution of these events supports the conclusion that seismic risk in the Borough is influenced by both nearby and distant seismic sources.

8.3 Extent

Extent describes the severity or magnitude of a hazard, including the intensity, geographic scale, and potential level of impact on the planning area. The extent of seismic activity within the FNSB varies with location, seasonal conditions, and event characteristics.

Seismic hazard extent is characterized by ground shaking intensity, duration, and geographic distribution. Impacts vary with proximity to fault systems, soil conditions, and structural vulnerability, with the potential for widespread effects, including infrastructure damage, ground failure, and disruption of lifeline systems.

In the FNSB, seismic event extent may include ground shaking intensities ranging from Modified Mercalli Intensity (MMI) VI (strong shaking) to MMI VIII or higher (severe shaking) during large regional earthquakes. These levels of shaking can result in moderate to heavy structural damage, particularly to older or non-ductile buildings, and may produce widespread impacts to infrastructure systems. Ground-shaking duration may last from several seconds to several minutes, as demonstrated during the 2002 Denali Fault earthquake, increasing the potential for cumulative structural damage. Secondary effects, including liquefaction, ground settlement, and slope failure, may further increase the extent of hazards in areas with saturated or unconsolidated soils, extending impacts beyond the immediate epicentral region.

Extent is further illustrated through hazard mapping and exposure analysis presented in Chapter 4.

8.4 Possible Impacts from Future Events

Future earthquakes affecting the FNSB have the potential to cause significant impacts on life safety, infrastructure, and operations, particularly during large-magnitude regional events. Seismic hazard analyses indicate that much of Interior Alaska is subject to strong-

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to-severe ground shaking that can damage structures, disrupt critical lifelines, and trigger cascading impacts across transportation, utilities, and emergency services.[408]

Ground shaking represents the primary earthquake hazard to the Borough. Strong shaking may cause structural damage to residential, commercial, industrial, and institutional buildings, particularly older structures not designed to meet modern seismic standards. Damage severity is influenced by building age, construction type, foundation conditions, and local soil characteristics, with soft or saturated soils increasing the potential for amplification and ground failure.[409]

Earthquakes may also cause ground deformation, including settlement, lateral spreading, and liquefaction in areas underlain by unconsolidated or water-saturated sediments, such as portions of the Tanana River Valley. These effects can damage foundations, roads, pipelines, utilidors, and buried utilities, complicating response and recovery efforts.[410]

Critical infrastructure systems are particularly vulnerable to seismic impacts. Transportation corridors, including the Richardson, Parks, and Steese Highways, rail infrastructure, and airport facilities, may be damaged by ground shaking, slope failures, or distress in bridges and embankments. Disruption to these systems could isolate communities, delay emergency response, and impede the movement of fuel, food, and medical supplies throughout Interior Alaska.[411]

Earthquake impacts on energy and lifeline systems could be severe. The TAPS, electrical transmission and distribution networks, fuel storage facilities, water and wastewater systems, and communications infrastructure may be affected by ground movement or

[408] Federal Emergency Management Agency (FEMA); U.S. Geological Survey (USGS). Earthquake ground shaking, liquefaction, and infrastructure vulnerability guidance. U.S. Geological Survey (USGS). *2023 National Seismic Hazard Model* – Interior Alaska seismic hazard characterization.

[409] Federal Emergency Management Agency (FEMA); U.S. Geological Survey (USGS). Earthquake ground shaking, liquefaction, and infrastructure vulnerability guidance.

[410] Federal Emergency Management Agency (FEMA); U.S. Geological Survey (USGS). Earthquake ground shaking, liquefaction, and infrastructure vulnerability guidance. Alaska Earthquake Information Center (AEIC); FEMA. Earthquake impacts in cold-region environments and Interior Alaska infrastructure considerations.

[411] Federal Emergency Management Agency (FEMA); U.S. Geological Survey (USGS). Earthquake ground shaking, liquefaction, and infrastructure vulnerability guidance.

loss of power. Damage to any of these systems could cause cascading impacts on the others, extending outages and recovery timelines.[412]

Military installations within the Borough, including Fort Wainwright and Eielson AFB, may also experience operational disruptions from seismic events. Damage to facilities, runways, utilities, or access routes could affect mission readiness, housing areas, and emergency response capabilities, with broader implications for regional and national defense operations.[413]

Seismic events occurring during winter conditions may present additional challenges, as extreme cold, limited daylight, and snow- or ice-covered transportation routes could hinder damage assessments, emergency response, and service restoration. These factors may increase risks to life safety and prolong recovery following a major earthquake.[414]

8.5 Recurrence Probability of Future Events

Earthquakes differ from many other natural hazards in that their exact timing, location, and magnitude cannot be predicted. Instead, recurrence probability is evaluated using a combination of prehistoric evidence, historical earthquake records, and ongoing seismological monitoring conducted by the AEIC and the USGS.[415]

The FNSB is located within an actively deforming region of Interior Alaska, influenced by the Denali Fault system, Tintina/Kaltag Fault system, and distributed crustal deformation associated with the collision of the Yakutat Terrane. This tectonic setting produces frequent small earthquakes and periodic moderate- to large-magnitude events capable of generating strong ground shaking across the Borough.[416]

[412] Federal Emergency Management Agency (FEMA); U.S. Geological Survey (USGS). Earthquake ground shaking, liquefaction, and infrastructure vulnerability guidance. Alaska Earthquake Information Center (AEIC); FEMA. Earthquake impacts in cold-region environments and Interior Alaska infrastructure considerations.

[413] Federal Emergency Management Agency (FEMA); U.S. Geological Survey (USGS). Earthquake ground shaking, liquefaction, and infrastructure vulnerability guidance.

[414] Alaska Earthquake Information Center (AEIC); FEMA. Earthquake impacts in cold-region environments and Interior Alaska infrastructure considerations.

[415] Alaska Earthquake Information Center (AEIC), University of Alaska Fairbanks. Interior Alaska seismic monitoring and earthquake catalog summaries. U.S. Geological Survey (USGS). *2023 National Seismic Hazard Model*.

[416] Alaska Earthquake Information Center (AEIC), University of Alaska Fairbanks. Interior Alaska seismic monitoring and earthquake catalog summaries. U.S. Geological Survey (USGS); AEIC. Tectonic framework and fault systems affecting Interior Alaska.

According to the 2023 National Seismic Hazard Model, Interior Alaska, including the FNSB, has a high likelihood of experiencing strong-to-severe ground shaking over long time horizons, even though large earthquakes occur infrequently. These hazard estimates reflect the cumulative influence of multiple fault systems and diffuse seismic zones rather than reliance on individual mapped faults, recognizing that many Interior Alaska earthquakes occur on poorly expressed or unmapped structures.[417]

Local geologic and soil conditions, including unconsolidated sediments, permafrost, thermokarst terrain, and groundwater-saturated soils, do not affect the probability of an earthquake occurring but can significantly influence the severity of shaking and secondary effects such as liquefaction and ground deformation when earthquakes do occur.[418]

Based on the historical record and current seismic hazard models, earthquakes should be considered a persistent and recurring hazard for the FNSB. While most seismic events are small, there is potential for future moderate- to large-magnitude earthquakes that could cause widespread impacts, including infrastructure damage and cascading disruptions to essential services.[419]

8.6 Existing Seismic Hazard Actions

Existing seismic hazard actions within the FNSB focus on risk reduction through building standards, regulatory oversight, public education, and interagency coordination. These actions are intended to reduce vulnerability to earthquake impacts by improving structural performance, increasing awareness, and supporting seismic-resilient design practices.

Alaska Seismic Hazard Safety Commission

The Alaska Seismic Hazard Safety Commission (ASHSC) is a statewide body composed of public and private-sector commissioners charged with increasing awareness of seismic hazards and promoting measures to reduce earthquake risk. A primary focus of the Commission is improving the seismic safety of public schools and other critical facilities. The Alaska Department of Education and Early Development serves as a liaison to the

[417] U.S. Geological Survey (USGS). *2023 National Seismic Hazard Model*.

[418] Federal Emergency Management Agency (FEMA); U.S. Geological Survey (USGS). Earthquake ground shaking, liquefaction, and site response guidance. Alaska Earthquake Information Center (AEIC); FEMA. Interior Alaska soil conditions, permafrost, and secondary earthquake effects.

[419] U.S. Geological Survey (USGS). *2023 National Seismic Hazard Model*. Alaska Earthquake Information Center (AEIC), University of Alaska Fairbanks. Interior Alaska seismic monitoring and earthquake catalog summaries.

Commission, supporting coordination between seismic safety objectives and school construction and renovation programs.

Through joint efforts involving the Commission and state agencies, Alaska has supported site-specific seismic design, engineering review, and construction inspection for new school facilities. The Commission also provides publicly accessible educational resources on earthquake preparedness, building safety, and mitigation strategies for communities across the state, including those in Interior Alaska.[420]

8.6.1 City of Fairbanks

Within the City of Fairbanks, seismic risk reduction is supported through building permit review, code adoption, and construction inspection. The City's Building Department is responsible for reviewing plans, issuing permits, and inspecting residential and commercial construction and renovation projects to ensure compliance with adopted building codes, including seismic design provisions of the IBC as locally adopted and amended.

The Building Department also enforces codes governing structural, mechanical, electrical, and plumbing systems and responds to complaints about unsafe or substandard buildings. Coordination with the Fairbanks Fire Department ensures that fire and life safety considerations are integrated into the permitting and inspection process. These regulatory activities help ensure that new development and substantial improvements incorporate seismic-resistant design appropriate for Interior Alaska conditions.[421]

8.6.2 City of North Pole

The City of North Pole supports seismic hazard mitigation through a similar building-permitting and code-enforcement framework. The City's Building Department issues construction permits and enforces locally adopted editions of the IBC, including applicable seismic provisions, as amended by local ordinance.

Plan review and inspection processes verify that new construction and significant alterations meet structural safety requirements, reducing vulnerability to earthquake impacts. These measures support long-term mitigation by improving the seismic performance of buildings within the City's jurisdiction.[422]

[420] Alaska Seismic Hazard Safety Commission (ASHSC). Seismic safety programs, public education resources, and school facility guidance.

[421] City of Fairbanks. Building Department code adoption, permitting, and inspection program documentation.

[422] City of North Pole. Building Department code adoption and enforcement records related to structural safety.

8.7 Future Seismic Mitigation Actions

Future seismic mitigation actions in the FNSB will focus on reducing structural vulnerability, protecting critical lifelines, improving situational awareness, and strengthening community preparedness, recognizing that earthquakes cannot be prevented and that the severity of damage is influenced by preparedness and design decisions made in advance of an event.[423]

A primary long-term mitigation strategy is the continued application and periodic update of seismic provisions within adopted building codes. As new development and redevelopment occur, enforcement of modern seismic design standards will incrementally reduce risk by improving the performance of buildings during strong ground shaking. Emphasis on seismic resilience for critical facilities, including emergency response buildings, healthcare facilities, schools, utilities, and communications infrastructure, remains an important mitigation priority.[424]

The Borough and its municipal partners may also pursue seismic risk screening and assessment of existing structures, particularly older buildings constructed prior to the adoption of modern seismic codes. Identification of vulnerable building types and lifeline systems can inform future retrofit prioritization, capital improvement planning, and grant-funded mitigation opportunities through state and federal programs.[425]

Future mitigation efforts may include integration of seismic hazard considerations into land-use planning, capital project design, and infrastructure maintenance, particularly in areas underlain by unconsolidated or water-saturated soils that may be susceptible to amplified shaking or liquefaction. Coordination with the AEIC, the ASHSC, and federal partners will support the use of the most current seismic science in planning and project development.[426]

Public education and preparedness will continue to play a role in seismic mitigation. Expanded outreach related to earthquake safety, household preparedness, and business continuity planning can reduce life-safety risk and improve post-event recovery.

[423] Federal Emergency Management Agency (FEMA). Earthquake mitigation guidance, building performance, and risk reduction strategies.

[424] City of Fairbanks; City of North Pole. Building code adoption, enforcement, and seismic design practices.

[425] Federal Emergency Management Agency (FEMA). Earthquake mitigation guidance, building performance, and risk reduction strategies.

[426] Alaska Earthquake Information Center (AEIC), University of Alaska Fairbanks. Seismic monitoring and hazard information for Interior Alaska. Alaska Seismic Hazard Safety Commission (ASHSC). Seismic safety, education, and mitigation program resources.

Incorporating earthquake preparedness messaging into existing outreach efforts supports a consistent, all-hazards approach to risk reduction.[427]

Finally, as new seismic hazard data and modeling become available, including updates to national hazard models or locally relevant studies, the FNSB will continue to evaluate opportunities to incorporate updated information into planning, mapping, and mitigation strategies. These actions support adaptive risk management and help ensure that seismic mitigation remains aligned with current scientific understanding.[428]

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[427] Alaska Seismic Hazard Safety Commission (ASHSC). Seismic safety, education, and mitigation program resources.

[428] U.S. Geological Survey (USGS). *2023 National Seismic Hazard Model*.

9. Ground Failure Profile (Including Cryosphere)

Ground failure hazards in the FNSB include landslides, slope instability, erosion, subsidence, liquefaction, and permafrost-related ground deformation. These hazards result from the loss of mechanical stability in soil or rock and may occur gradually over time or suddenly during triggering events such as intense precipitation, rapid snowmelt, thawing permafrost, or seismic shaking. Ground failure poses risks to transportation corridors, utilities, buildings, and critical infrastructure, particularly where development intersects steep terrain, river bluffs, ice-rich soils, or saturated sediments.[429]

Historic ground failure events within the Borough illustrate the consequences of slope instability and long-term ground movement on critical infrastructure. One notable example occurred along the Richardson Highway near Milepost 296.3, where a landslide affected approximately 140 feet of roadway. Pavement deformation was identified several years prior to remediation, with the rate of movement accelerating during 1999–2000, necessitating repeated roadway grading and stabilization measures to maintain safe travel conditions. This event highlights the progressive nature of certain ground-failure hazards in Interior Alaska and the importance of early detection, monitoring, and mitigation along key transportation routes.[430]

Because many ground failure processes in Interior Alaska are strongly influenced by cryosphere conditions, including permafrost and ground ice, these hazards are expected to evolve over time rather than remain static. As climate conditions, hydrology, and land use change, ground failure risk may increase in certain locations, reinforcing the need for site-specific evaluation and long-term planning to reduce future impacts.[431]

9.1 Nature and Location

Ground failure occurs when soil or rock materials lose mechanical stability, resulting in collapse, downslope movement, settlement, lateral spreading, or surface deformation. In the FNSB, ground failure hazards include landslides, slope instability, erosion, subsidence, liquefaction, and cryosphere-driven deformation associated with permafrost and ground

[429] Federal Emergency Management Agency (FEMA). Ground failure and landslide hazard characterization guidance. Alaska Division of Geological & Geophysical Surveys (DGGS); U.S. Geological Survey (USGS). Ground failure processes, permafrost, and slope instability in Interior Alaska.

[430] Alaska Department of Transportation & Public Facilities (DOT&PF). Richardson Highway landslide documentation and maintenance records (MP 296.3).

[431] Alaska Division of Geological & Geophysical Surveys (DGGS); U.S. Geological Survey (USGS). Ground failure processes, permafrost, and slope instability in Interior Alaska. Alaska Division of Geological & Geophysical Surveys (DGGS). Cryosphere-related ground deformation and permafrost degradation impacts.

ice. These hazards may develop gradually over time or occur suddenly during triggering events such as intense precipitation, rapid snowmelt, thawing permafrost, or seismic shaking.[432]

The distribution and severity of ground failure hazards in the Borough are controlled by topography, surficial geology, soil type, groundwater conditions, vegetation cover, and cryosphere processes, as well as human activities that alter slope geometry or drainage. Areas of elevated risk include steep upland slopes, river bluffs along the Tanana, Chena, Salcha, and Chatanika Rivers, transportation corridors, and low-lying alluvial areas underlain by saturated sediments or ice-rich permafrost.[433]

9.1.1 Ground Failure Processes

Landslides are a broad class of ground failure involving downslope movement of rock, soil, debris, or artificial fill. In Interior Alaska, landslides may be triggered by permafrost degradation, heavy rainfall, rapid snowmelt, erosion at the base of slopes, or seismic shaking, as well as by human activities such as excavation, vegetation removal, or altered surface and groundwater flow. Common landslide processes in the FNSB include rotational and translational slides, rockfalls, debris flows, earthflows, lateral spreads, and slow creep-type movements, as illustrated in Figure 9-1.[434]

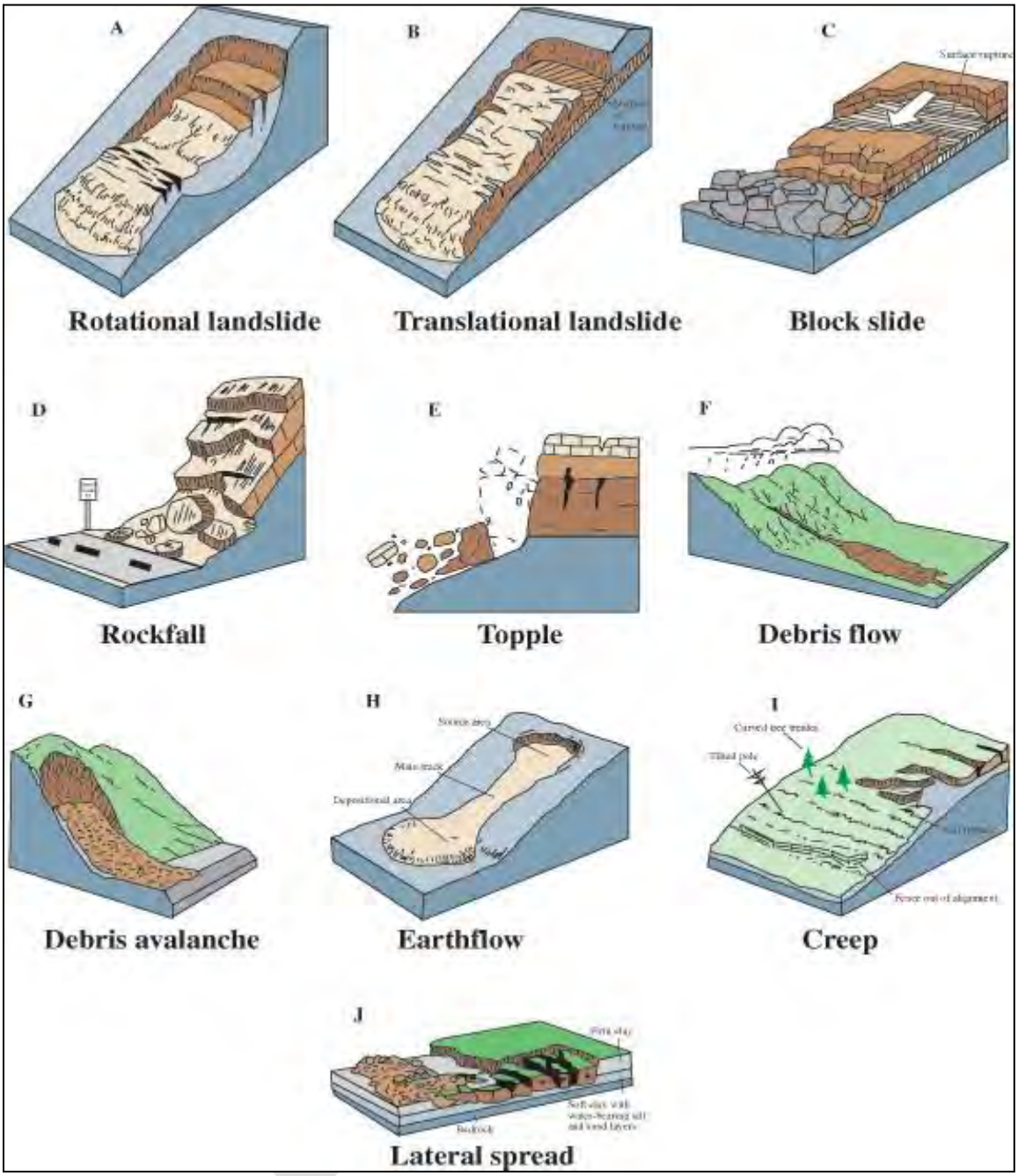
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[432] Federal Emergency Management Agency (FEMA). Ground failure and landslide hazard characterization guidance. Alaska Division of Geological & Geophysical Surveys (DGGS); U.S. Geological Survey (USGS). Landslide processes, loess geology, and surficial geology of Interior Alaska.

[433] Alaska Division of Geological & Geophysical Surveys (DGGS); U.S. Geological Survey (USGS). Landslide processes, loess geology, and surficial geology of Interior Alaska. Alaska Division of Geological & Geophysical Surveys (DGGS). Permafrost, thermokarst, and ground-ice hazards in Interior Alaska.

[434] Alaska Division of Geological & Geophysical Surveys (DGGS); U.S. Geological Survey (USGS). Landslide processes, loess geology, and surficial geology of Interior Alaska.

Figure 9-1: Landslide Classifications



Source: 2018 Alaska State Hazard Mitigation Plan | USGS product

Figure 9-1 illustrates common landslide classifications and failure mechanisms, including rotational and translational slides, debris flows, and other forms of mass movement. These classifications provide a framework for understanding the range of ground failure processes that may occur within the Borough and the conditions under which different types of slope instability may develop. In the FNSB, these processes are often influenced by permafrost conditions, groundwater, and seasonal thawing, which can significantly affect slope stability.

A permafrost-specific form of landslide known as an active-layer detachment occurs when thawed surface soils slide along the impermeable top of frozen ground, often lubricated by trapped water. These failures can initiate rapidly during warm or wet periods and may transition into debris flows where slopes are steep and soils become saturated.[435]

Frozen Debris Lobes (FDLs) represent a unique, slow-moving landslide type found in permafrost-affected mountainous regions of Alaska. These features consist of ice-rich debris deforming downslope over long periods and can pose persistent threats to transportation infrastructure where they intersect road corridors.[436]

Subsidence occurs where the ground surface sinks or settles due to loss of subsurface support. In the FNSB, subsidence is most commonly associated with thawing ice-rich permafrost (thermokarst), erosion of fine-grained soils such as loess, piping caused by subsurface water flow, or seismic ground deformation. Subsidence may damage foundations, roads, and buried utilities and often develops progressively over time.[437]

9.1.2 Cryosphere-Related Ground Failure

The cryosphere plays a central role in ground failure risk within the FNSB. The Borough lies within the discontinuous permafrost zone, where frozen ground is widespread but spatially variable. Ice-rich permafrost provides structural stability when frozen; however, warming temperatures, surface disturbance, or altered drainage can initiate thaw, resulting in thermokarst, differential settlement, surface cracking, and slope instability.[438]

Thawing ground ice can release volumes of water that exceed the pore space of soils, leading to downslope movement, erosion, and retrogressive thaw slumps. These processes may continue until the remaining ice is insulated by vegetation or sediment,

[435] Alaska Division of Geological & Geophysical Surveys (DGGS). Permafrost, thermokarst, and ground-ice hazards in Interior Alaska. U.S. Geological Survey (USGS); Alaska DGGS. Active-layer detachments, frozen debris lobes, and cryosphere-driven slope failures.

[436] U.S. Geological Survey (USGS); Alaska DGGS. Active-layer detachments, frozen debris lobes, and cryosphere-driven slope failures.

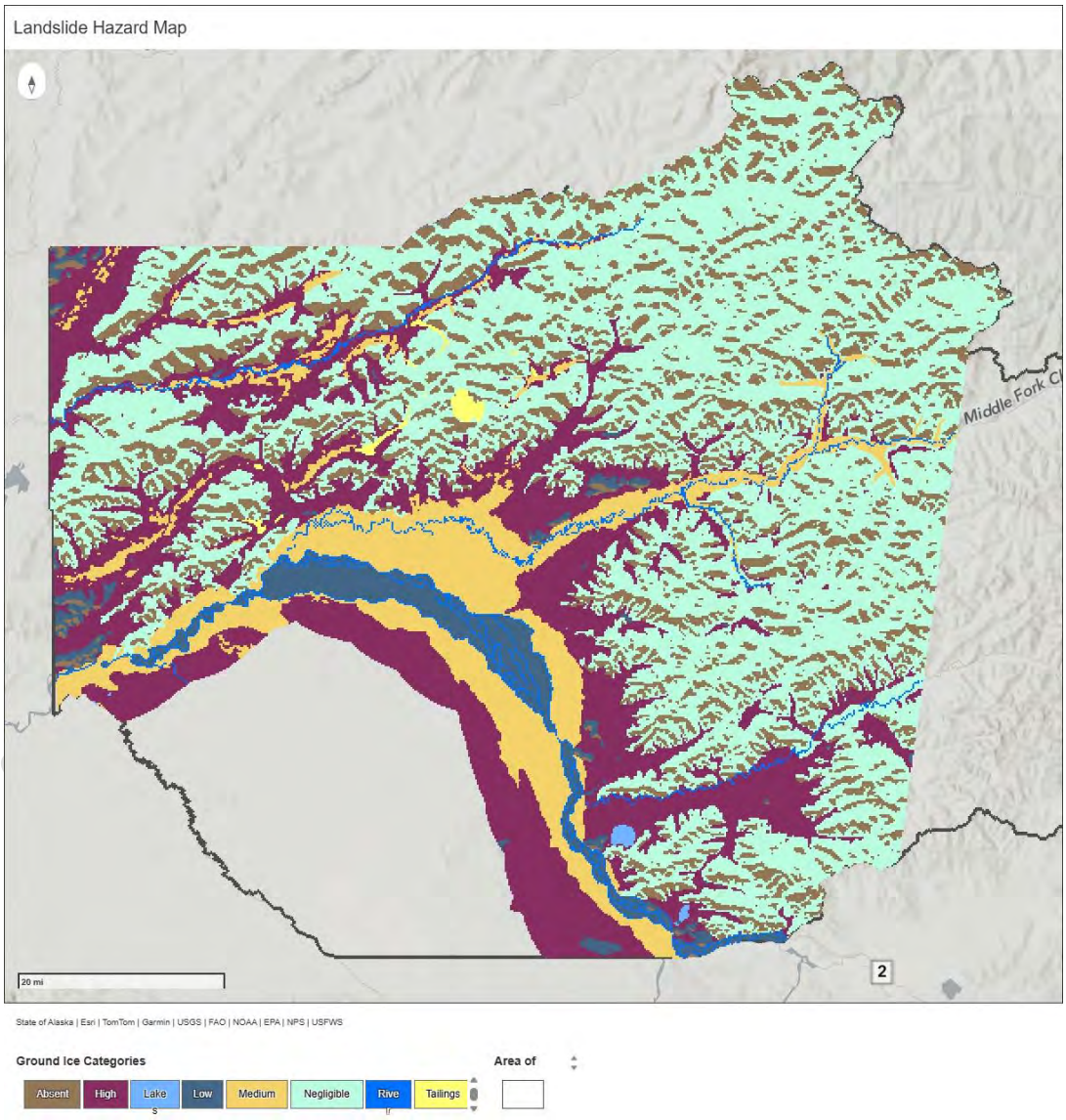
[437] Federal Emergency Management Agency (FEMA). Ground failure and landslide hazard characterization guidance. Alaska Division of Geological & Geophysical Surveys (DGGS). Permafrost, thermokarst, and ground-ice hazards in Interior Alaska.

[438] Alaska Division of Geological & Geophysical Surveys (DGGS). Permafrost, thermokarst, and ground-ice hazards in Interior Alaska. Institute of Northern Engineering, University of Alaska Fairbanks. Permafrost distribution and periglacial processes.

making cryosphere-related ground failure a long-term, evolving hazard rather than a single, discrete event.[439]

The Ground Ice Hazard Map (Figure 9-2) illustrates areas of moderate to high ground ice content across the Borough, identifying locations where thaw-related deformation and infrastructure damage are most likely without site-specific mitigation.[440]

Figure 9-2: Map of Ground Ice Hazard



Source: Fairbanks North Star Borough GIS

[439] U.S. Geological Survey (USGS); Alaska DGGS. Active-layer detachments, frozen debris lobes, and cryosphere-driven slope failures.

[440] Fairbanks North Star Borough GIS; State of Alaska. Ground ice, landslide susceptibility, and liquefaction mapping.

Figure 9-2 illustrates the spatial distribution of ground ice content across the Borough, highlighting areas with moderate to high susceptibility to thaw-related ground deformation. These patterns indicate that permafrost-related ground failure risk is not uniform but is concentrated in areas with ice-rich soils, where thawing can lead to subsidence, slope instability, and damage to infrastructure and foundations. The overlap of these high-ground ice areas with existing and future development increases the potential for long-term infrastructure challenges and maintenance requirements.

Research conducted by the Alaska CCHRC and University of Alaska partners has documented that ground failure associated with thawing permafrost is a leading cause of foundation settlement, structural distortion, and utility damage in Interior Alaska. Common failure modes include differential settlement beneath heated structures, loss of bearing capacity in ice-rich soils, and deformation of utilidors and roadbeds where thermal regimes are altered. These findings reinforce that ground failure risk in the FNSB is closely tied to development practices, heat transfer to the ground, and surface disturbance, as well as natural geologic conditions.[441]

9.1.3 Hillside Erosion and Loess-Related Hazards

Hillside erosion is a significant ground-failure concern due to the widespread presence of loess, a fine-grained, wind-deposited silt that is unconsolidated and highly erodible. The Fairbanks area contains some of the thickest loess deposits in the United States, ranging from shallow deposits over bedrock to thicknesses exceeding 200 feet in areas such as Gold Hill near Ester.[442]

Because loess lacks cohesion, it is easily mobilized by surface runoff unless stabilized by vegetation. Piping, caused by subsurface water removing fine particles, can lead to voids, collapse, and subsidence. Scouring at the base of slopes and infrastructure further increases instability, particularly along roads, riverbanks, and drainage corridors.[443]

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[441] Alaska Cold Climate Housing Research Center (CCHRC). Permafrost, foundation performance, and cold-climate construction research for Interior Alaska.

[442] Alaska Division of Geological & Geophysical Surveys (DGGS); U.S. Geological Survey (USGS). Landslide processes, loess geology, and surficial geology of Interior Alaska. Alaska Division of Geological & Geophysical Surveys (DGGS). Loess deposits, piping, erosion, and hillside instability in the Fairbanks area.

[443] Alaska Division of Geological & Geophysical Surveys (DGGS). Loess deposits, piping, erosion, and hillside instability in the Fairbanks area.

9.1.4 Liquefaction Susceptibility

Liquefaction is a ground failure process in which water-saturated, unconsolidated soils lose strength during seismic shaking, temporarily behaving as a fluid. In the FNSB, liquefaction susceptibility is highest in low-lying alluvial areas of the Tanana River Valley, where loose sands and silts and shallow groundwater are present.[444]

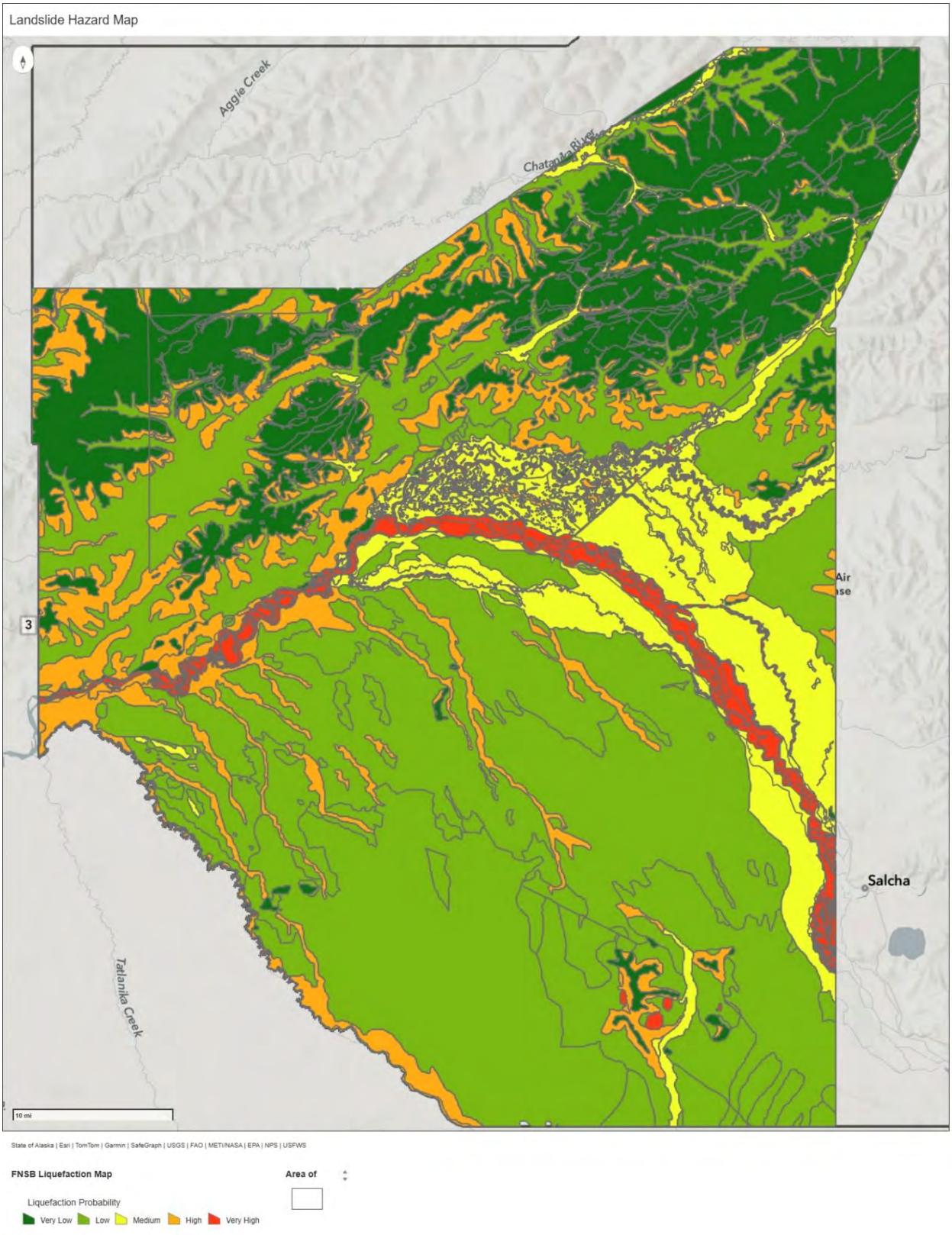
The Liquefaction Susceptibility Map (Figure 9-3) identifies areas with low to very high potential, demonstrating that earthquake-related ground failure risk is spatially variable and strongly governed by local soil and groundwater conditions rather than by proximity alone to fault systems.[445]

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[444] Alaska Division of Geological & Geophysical Surveys (DGGS); U.S. Geological Survey (USGS). Landslide processes, loess geology, and surficial geology of Interior Alaska. Federal Emergency Management Agency (FEMA); USGS. Liquefaction susceptibility and seismic ground failure guidance.

[445] Fairbanks North Star Borough GIS; State of Alaska. Ground ice, landslide susceptibility, and liquefaction mapping.

Figure 9-3: Map of Liquefaction Susceptibility



Source: Fairbanks North Star Borough GIS

Figure 9-3 illustrates the spatial distribution of liquefaction susceptibility across the Borough, including areas with varying potential levels based on soil type and groundwater conditions. These patterns indicate that liquefaction risk is concentrated in unconsolidated alluvial soils and in areas with shallow groundwater, particularly within the Tanana River Valley, where seismic shaking may cause ground deformation and damage to infrastructure.

The overlap of these susceptible areas with developed land and infrastructure underscores the importance of site-specific geotechnical evaluation and resilient design practices in mitigating earthquake-related ground failure.

Together, the landslide, ground-ice, and liquefaction mapping illustrate that ground failure hazards in the FNSB are heterogeneous, cryosphere-influenced, and location-specific, reinforcing the importance of geotechnical evaluation, careful land-use planning, and infrastructure design tailored to local conditions.[446]

9.2 Historical Occurrences

Ground failure hazards (including cryosphere-related processes) have occurred repeatedly throughout the recorded history of the FNSB, affecting transportation corridors, buildings, and other infrastructure. Many of these events developed gradually over time rather than as single catastrophic failures, reflecting the combined influence of permafrost degradation, loess erosion, groundwater movement, and seismic shaking characteristic of Interior Alaska.[447]

9.2.1 Landslides and Slope Failures

Documented landslides and slope failures have occurred in multiple parts of the Borough. Debris flows and slope failures were observed in the Chena River drainage during the 1967 flood, illustrating the interaction between hydrologic events and unstable terrain. Large seismic events have also triggered landslides and ground failures along major transportation corridors, including along the Richardson Highway (1937), the Tanana

[446] Federal Emergency Management Agency (FEMA). Ground failure and landslide hazard characterization guidance.

[447] Federal Emergency Management Agency (FEMA). Ground failure and landslide hazard documentation and mitigation guidance. Alaska Division of Geological & Geophysical Surveys (DGGS); U.S. Geological Survey (USGS). Landslides, erosion, and slope instability in Interior Alaska.

River corridor (1947 and 1957), and Chena Ridge (1957). These events demonstrate the sensitivity of slopes and river bluffs to seismic shaking in the region.[448]

The Richardson Highway southeast of Eielson AFB has a long history of rockslides and large ground failures that have required repeated repairs and, in some cases, realignment of roadway segments. These failures have imposed ongoing maintenance costs and highlighted the vulnerability of critical regional transportation routes to ground instability.[449]

9.2.2 LiDAR-Identified Landslides

Advances in terrain mapping have significantly improved the understanding of the distribution of ground failure in the Borough. Analysis of high-resolution LiDAR datasets acquired in 2017 and updated in 2023 across much of the populated FNSB identified thousands of landslide-like features, ranging from active to inactive, based on geomorphic expression. The updated 2023 LiDAR further refined the identification of subtle slope deformations, thaw-related subsidence features, and cryosphere-driven ground instability not previously detectable using aerial photography or satellite imagery alone. These findings indicate that ground failure features are more widespread and persistent than historically documented, particularly in forested and low-relief areas.[450]

9.2.3 Permafrost Degradation and Cryosphere Impacts

Permafrost and periglacial hazards represent the most widespread ground-related hazards in the Borough. Early development in the Fairbanks area often relied on construction practices imported from outside Alaska, resulting in significant damage where buildings and infrastructure were placed on ice-rich or unstable permafrost. Historical accounts documented by Péwé describe costly failures at locations such as the KFAR Radio Station, the University Presbyterian Church-School building, housing areas on Fort Wainwright, and structures along Farmers Loop Road, many of which were

[448] Alaska Division of Geological & Geophysical Surveys (DGGS); U.S. Geological Survey (USGS). Landslides, erosion, and slope instability in Interior Alaska. Alaska Department of Transportation & Public Facilities (DOT&PF). Richardson Highway and regional roadway ground failure maintenance records.

[449] Alaska Department of Transportation & Public Facilities (DOT&PF). Richardson Highway and regional roadway ground failure maintenance records.

[450] Fairbanks North Star Borough. 2017 LiDAR analysis and landslide feature identification. Fairbanks North Star Borough. 2023 LiDAR dataset and terrain analysis supporting landslide, subsidence, and ground-failure mapping.

affected by thermokarst and differential settlement following vegetation removal and ground warming.[451]

As cold-climate engineering practices evolved, damage rates declined; however, permafrost-related ground failure remains a persistent issue. Each year, the Alaska DOT&PF and FNSB RSAs repair roads damaged by permafrost thaw, subsidence, and frost heave. Common impacts include pavement cracking, settlement, roadbed twisting, and deformation of associated utilities.[452]

Analyses by UAF SNAP and ACCAP indicate that increasing ground temperatures and changes in seasonal freeze–thaw patterns are consistent with the observed persistence and geographic spread of permafrost-related ground failure documented in the Borough.[453]

9.2.4 Documented Sinkholes and Subsidence Events

Several discrete sinkhole and subsidence events have been documented in recent decades. In February 2011, thawing permafrost created multiple sinkholes on private property and within public rights-of-way, including a sinkhole triggered by parking-lot construction at the UAF Geophysical Institute. In 2013, Goldstream Road required reconstruction due to permafrost subsidence.[454]

During June and July 2014, multiple sinkholes were documented across the Borough. These included a sinkhole that closed the Wendell Avenue Bridge; sinkholes on the UAF campus near the Taku parking lot and the West Ridge Research Building; a 72-foot-deep sinkhole discovered on Gold Hill; and sinkhole damage that required closure of the Clear Creek Bridge near Salcha. Additional sinkholes were documented on Fort Wainwright in 2017, and subsidence-related damage continued in 2019, including sinkhole formation in

[451] Péwé, T.L. *Geologic Hazards of the Fairbanks Area, Alaska*. University of Alaska Fairbanks.

[452] Alaska Department of Transportation & Public Facilities (DOT&PF). Richardson Highway and regional roadway ground failure maintenance records. Fairbanks North Star Borough; Alaska DOT&PF. Permafrost subsidence, sinkhole, and roadway reconstruction documentation.

[453] University of Alaska Fairbanks, SNAP / ACCAP. Climate-driven permafrost thaw and ground stability implications for Interior Alaska infrastructure.

[454] Fairbanks North Star Borough; Alaska DOT&PF. Permafrost subsidence, sinkhole, and roadway reconstruction documentation.

Goldstream and stabilization efforts beneath a residential cabin using jacking and cribbing.[455]

In 2020, sections of Chena Hot Springs Road required reconstruction due to permafrost-related subsidence, illustrating the continuing nature of cryosphere-driven ground failure affecting transportation infrastructure.[456]

Additional permafrost-related sinkholes and erosion events have been documented in recent years. In 2009, a sinkhole caused the closure of Annie Avenue in Fairbanks due to thaw-related ground subsidence. On May 18, 2022, a large sinkhole measuring approximately 20 feet wide and 25 feet deep developed near City Lights Boulevard in the Birch Hill area, attributed to degrading permafrost and drainage conditions. During the 2023 winter breakup season, prolonged riverbank erosion and ice action along the Tanana River caused the complete loss of a residential structure when the supporting bank failed, and the house was washed into the river. These events further demonstrate the continuing and evolving nature of cryosphere-driven ground failure hazards within the Borough.[457]

9.2.5 Hillside Erosion

Hillside erosion has historically occurred in the Borough, particularly where ditches and channels constructed to support placer mining failed, allowing water to erode deep gullies measuring 10 to 20 feet deep and extending up to a quarter mile in length. Many of these erosion scars remain visible today. Hillside erosion continues to pose risks to roads located in hilly terrain, particularly during periods of heavy precipitation or rapid snowmelt, even though no recent standalone hillside erosion disasters have been formally documented since earlier hazard mitigation planning efforts.[458]

Overall, the historical record demonstrates that ground failure hazards (including cryosphere-related processes) in the FNSB are persistent, widespread, and often under-documented, with impacts that accumulate over time rather than occurring as

[455] Fairbanks North Star Borough; Alaska DOT&PF. Permafrost subsidence, sinkhole, and roadway reconstruction documentation.

[456] Fairbanks North Star Borough; Alaska DOT&PF. Permafrost subsidence, sinkhole, and roadway reconstruction documentation.

[457] Fairbanks North Star Borough; Alaska DOT&PF. Permafrost subsidence, sinkhole, and roadway reconstruction documentation.

[458] Alaska Division of Geological & Geophysical Surveys (DGGS); U.S. Geological Survey (USGS). Landslides, erosion, and slope instability in Interior Alaska.

isolated events. These patterns underscore the importance of long-term monitoring, site-specific investigation, and proactive mitigation to reduce future damage.[459]

9.3 Extent

Extent describes the severity or magnitude of a hazard, including the intensity, geographic scale, and potential level of impact on the planning area. The extent of ground failure (including cryosphere) within the FNSB varies based on location, seasonal conditions, and specific event characteristics.

The extent of ground failure hazards, including permafrost degradation, subsidence, and slope instability, varies based on soil conditions, temperature changes, and land use. Effects may be localized but can cause significant damage to infrastructure, buildings, and transportation systems, particularly in areas where development is sensitive to ground conditions.

In the FNSB, ground failure extent may range from small-scale surface deformation and settlement of a few inches to large slope failures, sinkholes, or subsidence features measuring several feet to tens of feet in depth or displacement. Impacts may be highly localized, affecting individual structures or road segments, or may extend along transportation corridors where slope instability, permafrost degradation, or erosion affects multiple miles of infrastructure. Some ground failure processes, such as landslides or liquefaction, may occur suddenly and produce immediate damage, while cryosphere-driven processes such as permafrost thaw, thermokarst, and creep may develop gradually over years to decades, resulting in cumulative and widespread impacts to buildings, utilities, and transportation systems across the Borough.

Extent is further illustrated through hazard mapping and exposure analysis presented in Chapter 4.

9.4 Possible Impacts from Future Events

Future ground failure hazards (including cryosphere-related processes) events are expected to pose ongoing and potentially increasing risks to infrastructure, transportation, and community access within the FNSB. Because many ground failure processes in Interior Alaska develop incrementally over time, impacts may accumulate

[459] Federal Emergency Management Agency (FEMA). Ground failure and landslide hazard documentation and mitigation guidance.

gradually before reaching thresholds that require emergency response or major reconstruction.[460]

Ground failure hazards, including landslides, subsidence, erosion, and permafrost-related deformation, may damage roads, bridges, utilities, buildings, and foundations, particularly where infrastructure is located on steep slopes, ice-rich permafrost, loess deposits, or saturated alluvial soils. Damage to transportation corridors can reduce or eliminate access for school transportation, emergency services, fuel delivery, postal service, and maintenance crews, isolating residents and increasing response times during emergencies.[461]

Cryosphere-driven ground failure is closely linked to temperature and precipitation patterns, making these hazards sensitive to changing environmental conditions. Warming ground temperatures altered freeze–thaw cycles, and increased moisture availability can accelerate permafrost thaw, thermokarst development, frost heave, and differential settlement, increasing the frequency and severity of infrastructure damage if not addressed through design and maintenance practices.[462]

Ground failure impacts may be compounded by other hazards. Seismic shaking can trigger landslides and liquefaction in susceptible soils, while heavy precipitation, rapid snowmelt, wildfire suppression activities, or changes to surface drainage can exacerbate erosion and slope instability. These interactions can increase repair costs, extend recovery timelines, and place additional strain on public works and emergency management resources.[463]

Economic impacts of ground-failure hazards (including cryosphere-related processes) can be substantial and persistent. Repeated repairs to roads, utilities, and buildings divert resources from other priorities, and long-term instability may affect housing availability, infrastructure reliability, and the feasibility of development in high-risk areas. As

[460] Federal Emergency Management Agency (FEMA). Ground failure and landslide impact guidance and mitigation principles. Alaska Division of Geological & Geophysical Surveys (DGGS); U.S. Geological Survey (USGS). Ground failure processes and triggering mechanisms in Interior Alaska.

[461] Alaska Department of Transportation & Public Facilities (DOT&PF); Fairbanks North Star Borough. Infrastructure damage and maintenance impacts associated with permafrost and ground instability.

[462] University of Alaska Fairbanks, SNAP / ACCAP. Climate influences on permafrost thaw, freeze–thaw cycles, and ground stability in Interior Alaska. Alaska Cold Climate Housing Research Center (CCHRC). Cold-climate construction and infrastructure performance related to cryosphere hazards.

[463] Alaska Division of Geological & Geophysical Surveys (DGGS); U.S. Geological Survey (USGS). Ground failure processes and triggering mechanisms in Interior Alaska. Federal Emergency Management Agency (FEMA); USGS. Interactions between seismic activity, landslides, and liquefaction.

demonstrated by past events, failure to account for ground conditions during development can result in recurring damage and escalating maintenance costs over time.[464]

Taken together, these potential impacts indicate that ground-failure hazards (including cryosphere-related processes) pose a chronic and evolving risk to the FNSB. Effective mitigation will require site-specific investigation, informed land-use planning, resilient infrastructure design, and continued monitoring, particularly in areas identified as susceptible to landslides, ground ice, and liquefaction mapping.[465]

9.5 Recurrence Probability of Future Events

Ground failure hazards (including cryosphere-related processes) differ from many natural hazards in that their exact timing, location, and magnitude cannot be predicted. Instead, probability is evaluated based on historical occurrence, geologic conditions, and environmental drivers, including the presence of permafrost, soil characteristics, hydrology, and climate influences.[466]

Within the FNSB, ground failure should be considered a highly likely and recurring hazard due to the widespread presence of discontinuous permafrost, ice-rich soils, loess deposits, and variable groundwater conditions. These factors create conditions in which ground deformation, subsidence, erosion, and slope instability occur regularly across the Borough, often without a single triggering event.[467]

Most ground failure events in the Borough develop incrementally, with small changes accumulating over time before reaching thresholds that result in noticeable damage, such as roadway deformation, structural settlement, or sinkhole formation. However, more

[464] Alaska Department of Transportation & Public Facilities (DOT&PF); Fairbanks North Star Borough. Infrastructure damage and maintenance impacts associated with permafrost and ground instability. Alaska Cold Climate Housing Research Center (CCHRC). Impacts of thawing permafrost on buildings, foundations, and utilities in Interior Alaska.

[465] Federal Emergency Management Agency (FEMA). Ground failure and landslide impact guidance and mitigation principles.

[466] Federal Emergency Management Agency (FEMA). Ground failure hazard characterization and recurrence guidance. Alaska Division of Geological & Geophysical Surveys (DGGS); U.S. Geological Survey (USGS). Interior Alaska ground failure processes and hazard occurrence.

[467] Alaska Division of Geological & Geophysical Surveys (DGGS); U.S. Geological Survey (USGS). Interior Alaska ground failure processes and hazard occurrence. Fairbanks North Star Borough GIS; LiDAR-based terrain and ground failure mapping (2017, 2023 updates).

rapid failures may occur when ground conditions are stressed by heavy precipitation, rapid snowmelt, seismic shaking, or disturbance of vegetation and surface drainage.[468]

Cryosphere conditions play a central role in recurrence probability. The FNSB lies within the discontinuous permafrost zone, where frozen ground is present but highly variable in thickness and stability. Permafrost thaw is influenced by air temperature, snow cover, and surface disturbance, all of which affect ground temperatures and soil strength. Increased snow depth can insulate the ground from winter cooling, leading to warmer subsurface conditions and reduced stability, while warmer air temperatures accelerate thaw of ice-rich soils.[469]

As ground temperatures increase, permafrost soils may experience loss of bearing capacity, reduced shear strength, and increased creep rates, resulting in a greater likelihood of subsidence and deformation. Infrastructure constructed on or within permafrost may become increasingly vulnerable over time, even where originally designed for cold-region conditions.[470]

Human activities can also influence the likelihood of ground failure. Construction of buildings, roads, and utilities can transfer heat into the ground or disturb insulating vegetation, accelerating permafrost thaw and increasing the probability of subsidence and slope instability. Improperly designed or maintained infrastructure may further exacerbate these processes by altering drainage patterns or concentrating loads on unstable soils.[471]

Based on the historical record, current geologic conditions, and environmental influences, ground failure and cryosphere-related hazards in the FNSB should be considered a persistent risk, with a high likelihood of continued occurrence. While most events are

[468] Federal Emergency Management Agency (FEMA). Ground failure hazard characterization and recurrence guidance.

[469] Alaska Climate Research Center; UAF SNAP / ACCAP. Temperature trends and snowpack influence on permafrost stability. U.S. Geological Survey (USGS); DGGS. Permafrost thermal dynamics and soil mechanical changes under warming conditions.

[470] U.S. Geological Survey (USGS); DGGS. Permafrost thermal dynamics and soil mechanical changes under warming conditions.

[471] Alaska Cold Climate Housing Research Center (CCHRC). Effects of infrastructure and surface disturbance on permafrost degradation.

localized and develop gradually, their cumulative impacts can be significant, particularly when they affect transportation corridors, utilities, and developed areas.[472]

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[472] Federal Emergency Management Agency (FEMA). Ground failure hazard characterization and recurrence guidance.

10. Mitigation Strategy

This chapter presents the mitigation strategy for the FNSB, developed to reduce long-term risk to life, property, critical facilities, infrastructure, and essential services from natural hazards. The strategy is based on the risk assessment findings presented in Chapter 4 and incorporates stakeholder input, local capabilities, and current and future hazard conditions.

The mitigation strategy establishes guiding principles, goals, and priority actions that address the Borough's most significant vulnerabilities. Emphasis is placed on actions that improve life safety, protect critical infrastructure, and enhance resilience to multi-hazard and extended-duration events. Implementation is supported through the Mitigation Action Plan (MAP), which provides a framework for prioritization, coordination, and ongoing evaluation.

10.1 Mitigation Strategy and Overview

This section updates the mitigation strategy included in the 2021 FNSB MJ-HMP, which was developed with extensive stakeholder participation. The overall approach, goals, and intent of the 2021 mitigation strategy remain valid and are reaffirmed through this update. Revisions reflect changes in local conditions, stakeholder input collected during the 2026 update process, and progress made since plan adoption.[473]

The mitigation strategy continues to focus on reducing long-term risk to life, property, critical facilities, infrastructure, and essential services from natural hazards. Emphasis is placed on mitigation actions that are feasible within existing legal, regulatory, and fiscal authority, and that can be implemented incrementally over the life of the plan. This approach recognizes the Borough's diverse jurisdictions, varied hazard exposure, and capacity constraints.[474] Mitigation actions were developed directly from the risk assessment findings in Chapter 4, with priority given to high-risk hazards and vulnerabilities identified through exposure and impact analysis.

Mitigation actions are guided by the following principles, which are consistent with those established in the 2021 Plan and reaffirmed by stakeholders during this update:

[473] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Planning Process and Stakeholder Engagement.

[474] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan.

- Focus on life safety and protection of critical services;
- Address multiple hazards where practicable;
- Coordinate mitigation with existing plans, programs, and capital investments; and
- Recognize jurisdictional limitations and rely on partnerships and voluntary participation where regulatory authority is limited.[475]

Stakeholder feedback during the 2026 update emphasized the continued importance of wildfire risk reduction, emergency access and egress, protection of utilities and lifelines, and mitigation measures that support extended-duration incidents. These priorities build on and reinforce the mitigation needs identified in the 2021 stakeholder process and are reflected in the updated MAP. While priorities have been refined to reflect current conditions, they do not fundamentally alter the mitigation strategy established in 2021.[476]

The overall structure and guiding principles of the mitigation strategy are summarized in Table 10-1.

Table 10-1: Summary of Mitigation Strategy and Guiding Principles

Section	Element	Summary
10.1	Plan Continuity	Mitigation strategy builds on the 2021 MJ-HMP and reaffirms its overall approach and intent
10.1	Primary Focus	Reduce long-term risk to life, property, critical facilities, infrastructure, and essential services
10.1	Implementation Approach	Incremental implementation within existing legal and fiscal authority
10.1	Life Safety	Prioritize protection of life and continuity of critical services
10.1	Multi-Hazard Mitigation	Favor mitigation measures that reduce risk across multiple hazards
10.1	Plan Integration	Coordinate mitigation with existing plans, programs, and capital investments

[475] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Planning Process and Stakeholder Engagement.

[476] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Planning Process and Stakeholder Engagement.

Section	Element	Summary
10.1	Jurisdictional Reality	Rely on partnerships and voluntary participation where regulatory authority is limited
10.1	Stakeholder Priorities	Wildfire risk, access and egress, utilities and lifelines, extended-duration incidents

As shown in Table 10-1, the mitigation strategy is centered on reducing risk to life and critical services through coordinated, multi-hazard approaches that align with existing plans and jurisdictional capabilities. These guiding principles support the selection and prioritization of mitigation actions described in the MAP.

The mitigation strategy is implemented through the hazard mitigation plan goals, supported by the MAP, and maintained through the plan maintenance process described later in this document. This structure ensures continuity between planning cycles while allowing for adaptive updates as conditions, risks, and capabilities evolve.[477]

10.2 Capability Assessment

10.2.1 Purpose and Methodology

This Capability Assessment updates the assessment completed during the 2021 FNSB MJ-HMP. The assessment evaluates current administrative, technical, legal, fiscal, and coordination capabilities relevant to hazard mitigation and identifies both capabilities that support mitigation implementation and constraints that continue to affect the pace and scope of mitigation activities.[478]

The assessment was updated using the following methods:

- ★ Review of existing plans, ordinances, policies, and programs relevant to hazard mitigation;
- ★ Stakeholder input collected during the 2026 plan update process, including feedback on ongoing challenges and priorities; and

[477] Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Planning Process and Stakeholder Engagement.

[478] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Capability Assessment, 2021 Multi-Jurisdictional Hazard Mitigation Plan.

- ★ Consideration of changes since 2021 related to staffing, funding, workload, and operational conditions, including lessons learned during extended-duration incidents.[479]

This approach ensures continuity with the 2021 plan while incorporating updated information on current capabilities and constraints affecting mitigation implementation.[480]

10.2.2 Administrative and Technical Capabilities

The FNSB Emergency Operations Department remains responsible for coordinating hazard mitigation planning, grant administration, and interagency coordination. This role is unchanged from the 2021 MJ-HMP and continues to serve as the central administrative function supporting mitigation activities across the Borough.[481]

In addition to Borough-level capabilities, the Cities of Fairbanks and North Pole maintain administrative and technical capabilities that support mitigation implementation within their respective jurisdictions. Municipal departments, including planning, public works, fire, and emergency management personnel, support mitigation through local infrastructure planning, emergency response coordination, code enforcement, and participation in hazard mitigation planning and grant activities. These capabilities allow each municipality to implement jurisdiction-specific mitigation actions identified in the MAP while coordinating with Borough, state, and federal partners.

Administrative capabilities supporting mitigation include:

- ★ Hazard mitigation plan development, maintenance, and FEMA compliance;
- ★ Grant application, management, and reporting for mitigation-related funding opportunities;
- ★ Coordination with municipal governments, fire service areas, state and federal agencies, utilities, non-governmental organizations, and other partners; and

[479] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Capability Assessment, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Stakeholder Engagement and Planning Process.

[480] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Capability Assessment, 2021 Multi-Jurisdictional Hazard Mitigation Plan.

[481] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Capability Assessment, 2021 Multi-Jurisdictional Hazard Mitigation Plan.

- Public education and outreach related to hazard awareness, preparedness, and mitigation.[482]

Technical capabilities to support mitigation are provided by Borough and municipal planning staff, public works and engineering departments, utilities, fire service areas, and state and federal partners. These capabilities support activities such as floodplain management, infrastructure and capital improvement planning, wildfire and urban conflagration mitigation, and post-event recovery coordination.[483]

Stakeholders and staff noted that staffing capacity and workload demands, particularly during prolonged or overlapping emergency incidents, continue to affect the timing and implementation of mitigation projects. This constraint was identified in the 2021 plan and remains applicable during the current update cycle, underscoring the need for incremental, prioritized mitigation actions that align with available capacity.[484]

10.2.3 Legal and Regulatory Capabilities

The legal and regulatory framework influencing hazard mitigation in the FNSB remains largely unchanged from that described in the 2021 MJ-HMP. Regulatory authority relevant to mitigation is distributed among the Borough and incorporated municipalities and varies significantly by location.[485]

Each participating jurisdiction maintains legal and regulatory capabilities that support the implementation of hazard mitigation strategies within its authority. Participating jurisdictions maintain complementary legal and regulatory authorities that support hazard mitigation implementation. The FNSB is responsible for land-use planning, zoning, and development regulations that guide growth and reduce exposure to hazard-prone areas. The Cities of Fairbanks and North Pole enforce adopted building codes, including the International Building Code (IBC) (see Table 2-5), and administer permitting processes

[482] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Capability Assessment, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Stakeholder Engagement and Planning Process.

[483] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Capability Assessment, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026.

[484] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Capability Assessment, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Stakeholder Engagement and Planning Process.

[485] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Capability Assessment, 2021 Multi-Jurisdictional Hazard Mitigation Plan.

that ensure development meets applicable safety and resilience standards. Collectively, these authorities provide a regulatory framework to reduce hazard risk through risk-informed development and resilient construction practices.

Floodplain management within the Borough is conducted under Title 15, consistent with NFIP requirements. This authority supports mitigation of flood risk through development standards, permitting, and participation in the NFIP, but does not extend to comprehensive land-use regulation outside mapped special flood hazard areas.[486]

Subdivision review conducted under Title 17 provides limited authority to address issues such as access, drainage, and utility layout at the time of development. While this process allows some consideration of hazard exposure, it does not provide broad authority to require mitigation measures beyond subdivision-level infrastructure improvements.[487]

Zoning authority under Title 18 applies borough-wide, including unincorporated areas of the FNSB, and provides a general framework for regulating land use and development patterns. However, authority for building code adoption and enforcement outside of floodplain regulations (Title 15) is held primarily by the Cities of Fairbanks and North Pole. As a result, while the Borough can influence development through zoning and subdivision processes, its ability to regulate construction standards and structural mitigation measures in unincorporated areas is limited. Consequently, mitigation in these areas continues to rely heavily on education, infrastructure planning, coordination with service areas and utilities, and voluntary participation.[488]

As noted in the 2021 MJ-HMP, these limitations significantly constrain the use of regulatory mitigation measures in unincorporated areas. Mitigation, therefore, continues to rely heavily on education, infrastructure planning, coordination with service areas and utilities, and voluntary participation, particularly for hazards such as wildfire and urban conflagration, where exposure is influenced by development location and access.[489]

[486] Fairbanks North Star Borough (FNSB). Borough Code (Titles 15). Federal Emergency Management Agency (FEMA). National Flood Insurance Program (NFIP) Regulations and Floodplain Management Requirements.

[487] Fairbanks North Star Borough (FNSB). Borough Code (Titles 17).

[488] Fairbanks North Star Borough (FNSB). Borough Code (Titles 15 and 18) and Municipal Code Authority Overview.

[489] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Capability Assessment, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). Borough Code (Titles 15, 17, and 18) and Municipal Code Authority Overview.

10.2.4 Fiscal Capabilities

Fiscal capacity for hazard mitigation within the FNSB remains limited and is generally consistent with conditions described in the 2021 MJ-HMP. Mitigation activities are supported by a combination of local, service-area, and external funding sources rather than by dedicated mitigation revenue streams.[490]

Mitigation activities are supported by a range of funding sources, including:

- ★ Local operating and capital budgets, where mitigation can be incorporated into planned maintenance or capital improvement projects;
- ★ Fire service area and other service area funding, where applicable and authorized;
- ★ State and federal grant programs, including FEMA HMA programs; and
- ★ Partnerships with utilities and other agencies that integrate mitigation into infrastructure investments.[491]

The primary funding sources available to support mitigation activities in the Borough are summarized in Table 10-2.

Table 10-2: Financial Resources

Funding Source	Generally Available
Local operating/capital budgets	Limited
Service area funding	Varies
FEMA mitigation grants	Competitive
Utility partnerships	Project-specific

As shown in Table 10-2, mitigation funding in the Borough is limited and highly dependent on external sources, particularly competitive state and federal grant programs. Local and service area funding sources are available but are typically constrained and must be

[490] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Capability Assessment, 2021 Multi-Jurisdictional Hazard Mitigation Plan.

[491] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Capability Assessment, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Federal Emergency Management Agency (FEMA). Hazard Mitigation Assistance (HMA) Grant Programs Guidance.

balanced against other operational and capital priorities. These conditions reinforce the need for strategic prioritization of mitigation projects and reliance on partnerships to support implementation. These fiscal limitations influence the timing, scope, and feasibility of mitigation actions identified in the MAP.

Stakeholders reaffirmed that most large-scale mitigation projects depend on external grant funding. As a result, mitigation implementation is influenced by grant availability, eligibility requirements, matching fund obligations, and grant application and award cycles. These factors continue to affect the timing, sequencing, and scope of mitigation projects, reinforcing the importance of prioritization and incremental implementation.[492]

10.2.5 Interagency Coordination Capabilities

Hazard mitigation implementation within the FNSB relies on ongoing coordination among Borough departments, municipalities, fire service areas, utilities, state agencies, tribal entities, federal agencies, and non-governmental organizations. Stakeholders consistently emphasized that effective mitigation depends on sustained coordination and partnerships, particularly in areas where regulatory authority is limited.[493]

Coordination mechanisms identified in the 2021 MJ-HMP remain in place and continue to support the implementation of mitigation measures. These include interagency planning efforts, shared participation in mitigation grant programs, coordination through emergency management and wildfire planning processes, and collaboration during preparedness, response, and recovery activities.[494]

During the 2026 update process, stakeholders reaffirmed the importance of coordination in addressing complex, multi-jurisdictional hazards such as wildfires, urban conflagrations, flooding, and extended-duration incidents. Coordination with utilities, transportation providers, and emergency services was identified as particularly critical for

[492] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Capability Assessment, 2021 Multi-Jurisdictional Hazard Mitigation Plan.

[493] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Capability Assessment, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Interagency Coordination Records, 2021–2026.

[494] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Capability Assessment, 2021 Multi-Jurisdictional Hazard Mitigation Plan.

mitigation actions related to lifelines, access and egress, and the continuity of essential services.[495]

10.2.6 Capability Summary

Overall, participating jurisdictions within the FNSB possess adequate capability to implement the MAP within existing legal, fiscal, staffing, and coordination constraints. Capabilities identified in the 2021 MJ-HMP remain generally applicable, and the updated mitigation actions and timelines reflect realistic expectations based on current authority, workload, funding availability, and partnership structures.[496]

The Capability Assessment confirms that mitigation success in the Borough depends less on regulatory authority alone and more on prioritization, interagency coordination, incremental implementation, and leveraging external funding and partnerships. This approach aligns mitigation actions with existing capacity while allowing flexibility to adapt as conditions and resources evolve over the life of the plan.[497]

This Capability Assessment reflects the combined and complementary capabilities of the FNSB, the City of Fairbanks, and the City of North Pole, each of which contributes to the implementation of mitigation within its jurisdictional authority.

The key findings of the capability assessment are summarized in Table 10-3.

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[495] Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Stakeholder Engagement and Planning Process. Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Interagency Coordination Records, 2021–2026.

[496] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Capability Assessment, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Stakeholder Engagement and Planning Process.

[497] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Capability Assessment, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). Legal, Regulatory, and Fiscal Capability Assessment, 2021 Plan.

Table 10-3: Capability Assessment Summary

Section	Capability Area	Key Considerations
10.2.1	Assessment Basis	Review of plans, ordinances, programs, stakeholder input, and post-2021 conditions
10.2.2	Administrative	The Emergency Operations Department coordinates mitigation planning, grants, and compliance
10.2.2	Technical	Support from planning, public works, utilities, fire service areas, and partner agencies
10.2.3	Legal / Regulatory	Floodplain (Title 15), subdivision review (Title 17), borough-wide zoning (Title 18), limited building code authority outside cities
10.2.4	Fiscal	Reliance on grants, local budgets, service areas, and partner contributions
10.2.5	Coordination	Interjurisdictional and interagency coordination is essential for mitigation success
10.2.6	Overall Capability	Adequate capability exists within known authority, staffing, and funding constraints

Source: Fairbanks North Star Borough 2021 Multi-Jurisdictional Hazard Mitigation Plan and 2026 Update.

As shown in Table 10-3, jurisdictions within the Borough have adequate capability to implement mitigation actions within existing authority, staffing, and funding constraints. Successful implementation relies on coordination among agencies, prioritization of actions, and effective use of external funding and partnerships rather than on regulatory authority alone. These capabilities support the implementation of the mitigation actions identified in the MAP and reinforce the importance of collaborative, multi-jurisdictional approaches to risk reduction.

10.3 Mitigation Project and Funding Process

10.3.1 Overview

This section updates the mitigation project and funding processes described in the 2021 FNSB MJ-HMP. The overall process for identifying, prioritizing, funding, and implementing mitigation projects remains unchanged and continues to meet FEMA requirements for local hazard mitigation planning.[498]

[498] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook and Hazard Mitigation Assistance Guidance.

The MAP remains the primary mechanism for documenting, prioritizing, and tracking mitigation projects over the plan's five-year cycle. The MAP provides a structured framework for aligning mitigation actions with identified hazards, available capabilities, and funding opportunities, while allowing flexibility to adapt to changing conditions and resources.[499]

10.3.2 Project Identification

Mitigation projects are identified through multiple complementary inputs, ensuring that actions address documented risks, stakeholder priorities, and operational experience. Sources used to identify mitigation projects include:

- ★ Findings from hazard risk and vulnerability assessments;
- ★ Stakeholder and agency input collected during the plan update process;
- ★ Lessons learned from emergency incidents, exercises, and after-action reviews;
- ★ Capital improvement planning processes and infrastructure assessments; and
- ★ Public input received during the plan update.[500]

Mitigation projects may be structural or non-structural and may address policy, planning, education, operational preparedness, or infrastructure needs. This flexible approach allows mitigation actions to be scaled to available authority, funding, and implementation capacity.[501]

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[499] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan.

[500] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Planning Process, Stakeholder Engagement, and Capability Assessment.

[501] Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook and Hazard Mitigation Assistance Guidance.

10.3.3 Project Evaluation and Prioritization

Mitigation projects are evaluated and prioritized using qualitative criteria consistent with FEMA guidance. These criteria are intended to support informed decision-making and transparent prioritization rather than to guarantee project funding or implementation.[502]

Projects were prioritized using a qualitative evaluation process, with emphasis on life safety, protection of critical facilities, feasibility, cost-effectiveness, and multi-hazard benefits.

Evaluation and prioritization considerations include:

- Potential to reduce risk to life safety and property;
- Protection of critical facilities, lifelines, and infrastructure;
- Feasibility within existing legal, regulatory, and administrative authority;
- Relative cost, potential funding eligibility, and implementation complexity; and
- Ability to address multiple hazards or provide co-benefits across hazard types.[503]

Project prioritization guides funding strategies and implementation sequencing. Inclusion of an action in the MAP does not represent a commitment to fund or implement all actions but rather reflects a planning-level assessment of relative priority and feasibility.[504]

10.3.4 Funding Sources

As described in the 2021 FNSB MJ-HMP, funding for mitigation activities relies on a combination of local, state, federal, and partner resources rather than on a single

[502] Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook and Hazard Mitigation Assistance Guidance.

[503] Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook and Hazard Mitigation Assistance Guidance. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Planning Process, Stakeholder Engagement, and Capability Assessment.

[504] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook and Hazard Mitigation Assistance Guidance.

dedicated funding source. This funding framework remains applicable during the current update cycle.[505]

Mitigation projects may be supported through a mix of the following sources:

- FEMA HMA programs, including competitive grant opportunities;
- State funding programs, where available and applicable;
- Local capital and operating budgets, particularly where mitigation can be incorporated into planned projects; and
- Partner agency contributions, including utilities and other infrastructure owners that integrate mitigation into system upgrades.[506]

Availability of funding and the ability to meet matching requirements remain the primary factors affecting the timing and feasibility of mitigation project implementation. These constraints reinforce the importance of prioritization and incremental implementation over the life of the plan.[507]

10.3.5 Implementation and Monitoring

Mitigation projects are implemented by the agency or jurisdiction identified in the MAP once funding is secured and required approvals are obtained. The FNSB Emergency Management function coordinates grant management, compliance, and reporting for mitigation projects funded through state or federal programs.[508]

Project status is reviewed during annual plan maintenance and updated as needed to reflect implementation progress, funding changes, revised priorities, or evolving

[505] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan.

[506] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook and Hazard Mitigation Assistance Guidance.

[507] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Planning Process, Capability Assessment, and Plan Maintenance.

[508] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Planning Process, Capability Assessment, and Plan Maintenance.

conditions. This review process supports transparency, accountability, and adaptive management of mitigation actions.[509]

10.3.6 Continuous Process

Mitigation project identification, prioritization, and funding are continuous and adaptive processes. New mitigation actions may be proposed, and existing priorities adjusted, during plan maintenance activities in accordance with FEMA guidance and documented changes in risk, capability, or opportunity.[510]

This approach allows the MAP to remain responsive to emerging hazards, lessons learned from incidents, and changes in funding or partnership opportunities while maintaining consistency with the overall mitigation strategy.[511]

The continuous process for mitigation project identification, prioritization, funding, and implementation is summarized in Table 10-4.

Table 10-4: Mitigation Project and Funding Process

Step	Section	Process Description
Identification	10.3.2	Risk assessment, stakeholder input, incident lessons learned, and capital planning
Evaluation	10.3.3	Qualitative screening for feasibility, costs, hazard coverage, and authority
Prioritization	10.3.3	Life safety, critical services, funding eligibility, multi-hazard benefit
Funding	10.3.4	FEMA mitigation program, state grants, local funds, partner support
Implementation	10.3.5	Implemented by the responsible agency, once funding is secured
Monitoring	10.3.5	Reviewed during annual plan maintenance

[509] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Planning Process, Capability Assessment, and Plan Maintenance.

[510] Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook and Hazard Mitigation Assistance Guidance. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Planning Process, Capability Assessment, and Plan Maintenance.

[511] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook and Hazard Mitigation Assistance Guidance.

Step	Section	Process Description
Adjustment	10.3.6	Actions may be added or reprioritized during plan maintenance

Source: Fairbanks North Star Borough 2021 Multi-Jurisdictional Hazard Mitigation Plan and 2026 Update.

As shown in Table 10-4, mitigation planning and implementation follow a continuous cycle that integrates risk assessment, stakeholder input, project evaluation, funding, and ongoing monitoring. This process ensures that mitigation actions remain responsive to changing conditions, funding opportunities, and lessons learned from hazard events. This adaptive approach supports long-term plan maintenance and ensures that the MAP remains current and aligned with evolving risks and capabilities.

10.4 2021 MJ-HMP Implementation Progress

10.4.1 Purpose

This section documents the implementation progress of mitigation actions identified in the 2021 FNSB MJ-HMP. The purpose of this section is to identify mitigation actions that have been completed, are ongoing, have been modified, or have been deferred since plan adoption, and to demonstrate how implementation experience informed the current plan update and the revised MAP.[512]

10.4.2 Summary of Progress Since 2021

Since the adoption of the 2021 MJ-HMP, the FNSB, the City of Fairbanks, and the City of North Pole have continued to advance mitigation activities within existing legal authority, staffing capacity, and fiscal constraints. Progress reflects the incremental implementation approach anticipated in the 2021 MJ-HMP and reinforced through stakeholder input during the 2026 update.[513]

Since the 2021 plan, mitigation efforts have focused on wildfire risk reduction, infrastructure resilience, and improved emergency preparedness. Actions have been

[512] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026.

[513] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026.

completed, advanced, or refined to reflect implementation experience, feasibility considerations, and funding availability.

Primary areas of mitigation progress include the following:

- ★ Planning and Plan Integration: Mitigation priorities identified in the 2021 MJ-HMP have been carried forward and integrated into updates of related plans, including the CEMP, CWPPs, and other hazard-specific and operational planning efforts. This integration has helped ensure consistency across planning documents and alignment between mitigation, preparedness, and response activities.[514]

- ★ Wildfire Risk Reduction: Continued coordination with fire service areas, state and federal partners, and other stakeholders supported wildfire-related mitigation activities, including fuels management planning, defensible space promotion, wildfire response coordination, and public education and outreach. While large-scale mitigation projects remain dependent on funding availability, ongoing planning and coordination efforts have strengthened readiness for wildfire and urban conflagration risks.[515]

- ★ Emergency Preparedness and Continuity: Mitigation actions related to emergency communications, backup power, sheltering, and preparedness for extended-duration incidents were addressed through planning updates, equipment improvements, training, exercises, and operational practices. These efforts enhanced continuity of operations and community resilience during prolonged or overlapping emergency events.[516]

- ★ Infrastructure and Critical Facilities: Selected mitigation measures affecting critical facilities, utilities, and transportation infrastructure were implemented through capital projects, routine maintenance programs, or grant-funded efforts where jurisdictional authority and funding allowed. These actions focused on risk

[514] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). Community Wildfire Protection Plan (CWPP) Updates and Interagency Coordination Records.

[515] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). Community Wildfire Protection Plan (CWPP) Updates and Interagency Coordination Records. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Planning Process and Capability Assessment.

[516] Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Planning Process and Capability Assessment.

reduction, system reliability, and protection of essential services rather than on comprehensive regulatory mitigation.[517]

Implementation experience since 2021 has informed the refinement of mitigation priorities, timelines, and approaches, as reflected in the updated MAP, reinforcing the importance of feasibility, coordination, and incremental progress.[518]

Progress in implementing mitigation actions since the 2021 plan is summarized in Table 10-5.

Table 10-5: Summary of Mitigation Implementation Progress Since 2021

Mitigation Area	Implementation Status	General Description of Progress
Planning and Plan Integration	Ongoing	Mitigation priorities from the 2021 MJ-HMP were carried forward and incorporated into updates of the CEMP, CWPPs, and related planning efforts.
Wildfire Risk Reduction	Ongoing	Coordination with fire service areas and partner agencies supported fuels planning, defensible space education, wildfire response planning, and outreach, subject to funding and capacity.
Emergency Preparedness and Continuity	Ongoing	Planning updates, training, exercises, and operational practices addressed communications, backup power, sheltering, and extended-duration incident preparedness.
Infrastructure and Critical Facilities	Selectively Implemented	Mitigation measures affecting utilities, facilities, and transportation infrastructure were implemented through capital projects, maintenance, or grant-funded efforts where feasible.

[517] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026.

[518] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026.

Mitigation Area	Implementation Status	General Description of Progress
Mitigation Action Plan Implementation	Ongoing	Actions were implemented incrementally, with experience-informed updates to priorities, timelines, and feasibility assumptions in the current plan update.

Source: Fairbanks North Star Borough 2021 Multi-Jurisdictional Hazard Mitigation Plan and 2026 Update; internal training, planning, and outreach records.

As shown in Table 10-5, mitigation implementation since 2021 has been ongoing and incremental, with progress achieved through planning integration, coordination, and targeted investments in preparedness and infrastructure resilience. While not all actions have been fully implemented, continued advancement reflects the Borough's capacity-based approach and reliance on partnerships, available funding, and operational opportunities. These accomplishments and lessons learned have informed the refinement of mitigation actions, priorities, and timelines in the updated MAP.

10.4.3 Status of 2021 Mitigation Actions

Implementation status of mitigation actions identified in the 2021 FNSB MJ-HMP generally falls into the following categories, based on stakeholder input, internal records, and implementation experience during the current update cycle.[519]

- ★ Completed or Ongoing Actions: Mitigation actions focused on planning, coordination, training, exercises, and public education showed the most consistent progress. These actions typically aligned with existing programs and operational responsibilities and required limited additional capital investment or regulatory authority. Examples include plan integration, wildfire coordination, preparedness outreach, and continuity planning.[520]
- ★ Partially Implemented or Adjusted Actions: Some mitigation actions were implemented in part or modified in scope, sequencing, or timeline to reflect updated risk information, operational experience during incidents, staffing

[519] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026.

[520] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026.

capacity, or funding availability. Adjustments were made to maintain feasibility while preserving the intent of the original mitigation objectives.[521]

- Deferred or Not Implemented Actions: Mitigation actions requiring significant capital investment, expanded regulatory authority, or sustained external funding were deferred or not implemented during this planning cycle. Stakeholders reaffirmed that grant dependency, match requirements, competitive funding cycles, and competing operational priorities remain primary constraints affecting the implementation of these actions.[522]

10.4.4 Lessons Learned

Implementation experience since the adoption of the 2021 MJ-HMP reinforced several key lessons relevant to mitigation planning and execution within the FNSB. These lessons informed refinements made during the current plan update and the development of the revised MAP.[523]

Key lessons learned include:

- Mitigation actions are most effective when integrated into existing plans, programs, and capital improvement processes, rather than pursued as stand-alone initiatives.
- Multi-hazard mitigation actions provide greater long-term benefit, flexibility, and efficiency than single-hazard solutions, particularly under constrained funding and staffing conditions.
- Clear identification of responsible agencies, partners, and realistic timelines improves implementation success and accountability.

[521] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026.

[522] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). Capability Assessment and Fiscal Constraints Summary, 2026 Multi-Jurisdictional Hazard Mitigation Plan Update.

[523] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026.

- ★ Continued reliance on coordination, partnerships, and voluntary participation is necessary due to limited land-use and regulatory authority in unincorporated areas of the Borough.[524]

These lessons directly informed updates to mitigation priorities, implementation approaches, and feasibility assumptions reflected in the current plan update.[525]

10.4.5 Relationship to the Updated Mitigation Action Plan (MAP)

The updated MAP builds directly on the foundation established in the 2021 FNSB MJ-HMP. Mitigation actions identified in the 2021 MJ-HMP were reviewed during this update to assess continued relevance, feasibility, and alignment with current conditions, capabilities, and stakeholder priorities.[526]

Actions that remain applicable were updated or refined to reflect changes in risk information, operational experience, funding considerations, and jurisdictional authority. Mitigation actions that were completed, determined to be no longer applicable, or duplicative of other efforts were removed or consolidated. New mitigation actions were added where gaps, emerging risks, or opportunities were identified through the capability assessment, stakeholder input, or lessons learned since 2021.[527]

Implementation experience since the adoption of the 2021 MJ-HMP demonstrates a continued commitment to hazard mitigation across participating jurisdictions and directly informed the structure, prioritization, and timelines of actions included in the updated

[524] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). Capability Assessment and Fiscal Constraints Summary, 2026 Multi-Jurisdictional Hazard Mitigation Plan Update.

[525] Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026.

[526] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Capability Assessment and Mitigation Strategy.

[527] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2021 Multi-Jurisdictional Hazard Mitigation Plan. Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Capability Assessment and Mitigation Strategy.

MAP. This approach ensures continuity between planning cycles while maintaining flexibility to address evolving risks and constraints.[528]

The relationship between implementation progress since the 2021 plan and the updated Mitigation Action Plan is summarized in Table 10-6.

Table 10-6: 2021 MJ-HMP Implementation Progress Categories

Section	Category	Description
10.4.3	Completed / Ongoing	Planning, coordination, training, and public education actions are implemented through existing programs
10.4.3	Partially Implemented	Actions refined or adjusted due to funding availability, scope, or operational considerations
10.4.3	Deferred / Not Implemented	Capital-intensive or regulatory-dependent actions are not feasible during this current planning cycle
10.4.4	Lessons Learned	Emphasis on plan integration, multi-hazard focus, realistic timelines, and partnerships
10.4.5	MAP Relationship	Actions updated, consolidated, or added to reflect current conditions and priorities

Source: Fairbanks North Star Borough 2021 Multi-Jurisdictional Hazard Mitigation Plan and 2026 Update.

As shown in Table 10-6, mitigation actions from the 2021 plan were carried forward, refined, or removed based on implementation progress, feasibility, and relevance to current conditions. This process ensures that the updated MAP reflects both completed efforts and remaining priorities while incorporating lessons learned and new opportunities for risk reduction. This approach demonstrates continuity between planning cycles and ensures that mitigation actions remain aligned with current risks, capabilities, and stakeholder priorities.

10.5 MJ-HMP Goals

10.5.1 Purpose

This section updates the mitigation goals established in the 2021 FNSB MJ-HMP. The overall intent, structure, and scope of the 2021 goals remain unchanged. Revisions made during this update clarify goal statements, confirm continued applicability, and ensure

[528] Fairbanks North Star Borough (FNSB). Emergency Operations Training, Exercises, and Community Outreach Records, 2021–2026. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Capability Assessment and Mitigation Strategy.

alignment with stakeholder input, implementation experience, and FEMA mitigation planning requirements.[529]

Mitigation goals provide the policy foundation for the MAP and guide prioritization of mitigation projects and activities throughout the life of the plan. The goals are intentionally broad to allow flexibility in implementation while maintaining focus on long-term risk reduction.[530]

10.5.2 Relationship to Previous Plans

The mitigation goals build upon those established in the 2014 and 2021 MJ-HMPs. Implementation experience documented in prior sections confirms that these goals remain appropriate, relevant, and achievable within existing legal, fiscal, and operational constraints.[531]

Stakeholder input collected during the 2026 plan update process supported retaining the existing mitigation goals with minor clarification, rather than introducing new or expanded goal areas. This feedback reflects a shared understanding that sustained progress is best achieved through refinement and continuity rather than frequent restructuring of mitigation objectives.[532]

10.5.3 Updated Mitigation Goals

The following mitigation goals reaffirm the goals established in the 2021 MJ-HMP and apply to all participating jurisdictions. These goals reflect continuity across planning cycles

[529] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Stakeholder Engagement and Planning Process.

[530] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans.

[531] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Fairbanks North Star Borough (FNSB). 2021–2026 Mitigation Implementation Progress Summary.

[532] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Stakeholder Engagement and Planning Process.

and incorporate stakeholder feedback and implementation experience without expanding scope or authority.[533]

Goal 1: Protect Life and Reduce Risk to Public Safety

Reduce the risk of injury, loss of life, and disruption to emergency response capabilities from natural hazards.

This goal emphasizes:

- ★ Emergency access and egress;
- ★ Protection of first responders and emergency operations facilities; and
- ★ Mitigation actions that support safe evacuation, sheltering, and response during hazard events, including wildfire and urban conflagration.[534]

Goal 2: Reduce Damage to Property, Infrastructure, and Critical Facilities

Minimize damage to public and private property, utilities, and critical infrastructure from natural hazards, including risks associated with flood control infrastructure and high-hazard-potential dam-related systems, through cost-effective and feasible mitigation measures.

This goal supports:

- ★ Protection of essential services and lifelines;
- ★ Integration of mitigation into capital improvement planning and infrastructure investments; and

[533] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Stakeholder Engagement and Planning Process.

[534] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Fairbanks North Star Borough (FNSB). 2021–2026 Mitigation Implementation Progress and Capability Assessment.

- ★ Reduction of long-term recovery costs and service disruptions.[535]

Goal 3: Improve Community Resilience and Continuity of Operations

Enhance the community's ability to withstand, respond to, and recover from hazard events, including prolonged or cascading incidents.

This goal reflects stakeholder emphasis on:

- ★ Backup power, communications, and utility redundancy;
- ★ Continuity of government and essential services; and
- ★ Planning for extended-duration emergencies that strain local capacity.[536]

Goal 4: Promote Hazard-Aware Planning and Development

Encourage consideration of natural hazards in planning, development, and land-use decisions where authority exists.

This goal acknowledges:

- ★ Limited regulatory authority in unincorporated areas of the Borough;
- ★ The role of subdivision review, floodplain management, municipal building, and fire codes; and
- ★ The importance of voluntary mitigation and informed decision-making by property owners and developers.[537]

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[535] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Fairbanks North Star Borough (FNSB). 2021–2026 Mitigation Implementation Progress and Capability Assessment.

[536] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Stakeholder Engagement and Planning Process.

[537] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Fairbanks North Star Borough (FNSB). Legal and Regulatory Capability Assessment (Titles 15, 17, and 18).

Goal 5: Increase Public Awareness and Support for Mitigation

Improve public understanding of local hazards and mitigation options to encourage voluntary risk reduction.

This goal supports:

- ★ Public education and outreach related to hazards and preparedness;
- ★ Collaboration with fire service areas, non-governmental organizations, and partner agencies; and
- ★ Increased participation in hazard mitigation programs and preparedness activities.[538]

Goal 6: Strengthen Interagency Coordination and Partnerships

Enhance coordination among jurisdictions, service areas, utilities, agencies, and organizations involved in hazard mitigation.

This goal reflects:

- ★ Stakeholder recognition that mitigation success depends on coordination and partnerships, not regulation alone; and
- ★ The need to align mitigation efforts across plans, programs, funding sources, and jurisdictions to maximize effectiveness.[539]

10.5.4 Implementation of Goals

The mitigation goals are implemented through the MAP, which identifies specific mitigation actions, responsible agencies or jurisdictions, general implementation timeframes, and potential funding sources. Progress toward achieving these goals is

[538] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Stakeholder Engagement and Planning Process.

[539] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Stakeholder Engagement and Planning Process. Fairbanks North Star Borough (FNSB). Interagency Coordination and Partnership Summary, 2021–2026.

monitored through the plan maintenance process and documented during annual reviews and future plan updates.[540]

The mitigation goals are intended to remain stable over the life of the plan, providing consistent policy guidance while allowing mitigation actions and priorities to adapt to changing conditions, funding opportunities, and implementation experience. This approach supports continuity across planning cycles while maintaining flexibility in execution.[541]

The MAP, presented in Chapter 11, translates these goals and strategies into specific, actionable mitigation measures.

The mitigation goals and their primary areas of focus are summarized in Table 10-7.

Table 10-7: MJ-HMP Goals and Focus Areas

Goal No.	Goal Title	Primary Focus Area
Goal 1	Protect Life and Public Safety	Emergency access and egress, first responders, evacuation, and sheltering
Goal 2	Reduce Damage to Property and Infrastructure	Critical facilities, utilities, and cost-effective mitigation
Goal 3	Improve Infrastructure Resilience and Continuity	Backup power, communications, and extended-duration incidents
Goal 4	Promote Hazard-Aware Planning	Floodplain management, subdivision review, and voluntary mitigation
Goal 5	Increase Public Awareness	Education, outreach, NGOs, and fire service partnerships
Goal 6	Strengthen Coordination	Interagency alignment, shared planning, and funding

Source: Fairbanks North Star Borough 2021 Multi-Jurisdictional Hazard Mitigation Plan and 2026 Update.

As shown in Table 10-7, the mitigation goals are focused on life safety, protection of critical infrastructure, resilience of essential services, hazard-aware planning, public awareness, and interagency coordination. These goals provide the foundation for

[540] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Fairbanks North Star Borough (FNSB). Mitigation Action Plan and Plan Maintenance Process, 2026 Multi-Jurisdictional Hazard Mitigation Plan Update.

[541] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook – Mitigation Strategy and Goal Implementation Guidance.

selecting and prioritizing mitigation actions in the MAP. Together, these goals ensure that mitigation actions address the Borough's most significant risks while supporting coordinated and effective implementation across jurisdictions.

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11. Mitigation Action Plan (MAP)

11.1 Purpose

The MAP identifies specific actions intended to reduce vulnerability to natural hazards and to support the mitigation goals outlined in Section 10.5 of this Plan. This section updates the MAP framework established in the 2021 FNSB MJ-HMP and reflects refinements based on implementation experience, capability assessment findings, and stakeholder input obtained during this plan update.[542] Mitigation actions and prioritization were informed by community and stakeholder input, including survey feedback on mitigation preferences, implementation barriers, and resource needs (Appendix C).

The MAP remains the primary implementation tool for translating mitigation goals into actionable projects and initiatives over the life of the plan.[543]

11.2 Relationship to the 2021 MJ-HMP

The overall structure, function, and intent of the MAP are consistent with the 2021 MJ-HMP. Many mitigation actions identified in the 2021 MJ-HMP remain relevant and were carried forward, revised, consolidated, or re-prioritized during this update based on the following considerations:

- Progress made since plan adoption;
- Updated hazard risk and vulnerability information;
- Feasibility within existing legal authority, staffing capacity, and fiscal constraints; and
- Stakeholder input gathered during the update process.[544]

[542] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Stakeholder Engagement, Capability Assessment, and Mitigation Strategy.

[543] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans.

[544] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Stakeholder Engagement, Capability Assessment, and Mitigation Strategy. Fairbanks North Star Borough (FNSB). 2021–2026 Mitigation Implementation Progress Summary.

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Mitigation actions that were completed, determined to be no longer applicable, or duplicative of other efforts were removed or consolidated, while new or modified actions were added where gaps, emerging risks, or implementation opportunities were identified.[545]

11.3 Development of the MAP

Mitigation actions included in the updated MAP were developed and refined through a multi-source process that included:

- ★ Review of mitigation actions from the 2014 and 2021 MJ-HMPs;
- ★ Findings from hazard risk and vulnerability assessments;
- ★ Input from Borough and municipal departments, fire service areas, utilities, partner agencies, and other stakeholders;
- ★ Lessons learned from recent hazard events, emergency activations, training, and exercises; and
- ★ Consideration of funding eligibility, match requirements, and implementation feasibility.[546]

The MAP emphasizes practical and attainable actions that can be advanced incrementally through existing programs, partnerships, and funding opportunities, consistent with the mitigation strategy and capability assessment described in Chapter 10.[547]

Severe weather mitigation actions were refined to address emerging risks associated with winter rain events, including prolonged icing, infrastructure impacts, and cascading

[545] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Fairbanks North Star Borough (FNSB). 2021–2026 Mitigation Implementation Progress Summary.

[546] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Stakeholder Engagement, Capability Assessment, and Mitigation Strategy. Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook – Mitigation Action Plan Development Guidance.

[547] Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Stakeholder Engagement, Capability Assessment, and Mitigation Strategy. Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook – Mitigation Action Plan Development Guidance.

effects on transportation and utility systems described in Chapter 6, as well as stakeholder and community input documented in Appendix C.

11.4 Organization of the MAP

The MAP is organized in table format to provide a clear, consistent framework for identifying and tracking mitigation actions across participating jurisdictions. The MAP is designed to support implementation, coordination, and periodic review while remaining flexible to changing conditions, funding availability, and capacity.[548]

11.4.1 MAP Methodology / Approach Paragraph

The mitigation actions included in this MAP were developed through an integrated planning approach that combines hazard risk assessment, capability assessment, and stakeholder input. Actions are aligned with the identified hazards, vulnerabilities, and critical infrastructure dependencies described in Chapters 4 through 9, and reflect existing regulatory authority, technical capacity, and available resources within participating jurisdictions. The planning team prioritized actions that provide multi-hazard benefits, address life safety and continuity of essential services, and support coordination across agencies and infrastructure partners. This approach ensures that mitigation actions are actionable, achievable, and consistent with FEMA guidance for risk-based mitigation planning.

Mitigation actions included in Tables 11-1 through 11-7 were developed collaboratively by participating jurisdictions, including the FNSB, the City of Fairbanks, and the City of North Pole. Each jurisdiction is represented within the MAP through jurisdiction-specific responsibilities, partnerships, and implementation roles identified for each action.

Across the MAP, one or more actions address each of the hazards identified in the risk assessment for all participating jurisdictions. Actions may be implemented independently by individual jurisdictions or jointly through multi-jurisdictional coordination, depending on the nature and scale of the mitigation measure.

For each mitigation action, the MAP identifies, as applicable:

- A mitigation action description;

[548] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy and Action Plan Framework.

- The hazard(s) addressed;
- Primary and supporting agencies or jurisdictions;
- A general implementation timeframe (short-, medium-, or long-term);
- Potential funding sources, where applicable; and
- Status or notes relevant to implementation or prioritization.[549]

Implementation timeframes are intended as general planning guidance only and do not represent fixed schedules or funding commitments. Actions are advanced incrementally as authority, capacity, and funding allow.[550]

11.4.2 MAP Notes (Applies to Tables 11-1 through 11-7)

The mitigation actions identified for each hazard category are presented in Tables 11-1 through 11-7. Responsible agencies listed in Tables 11-1 through 11-7 identify the jurisdiction(s) leading or supporting implementation of each action, ensuring that each participating jurisdiction, the FNSB, City of Fairbanks, and City of North Pole, is clearly associated with one or more mitigation actions across all hazard categories.

The mitigation actions presented are planning-level recommendations developed through the risk assessment, capability assessment, and stakeholder input process described in this plan. Timeframes represent general implementation horizons and do not constitute funding commitments. Implementation of actions depends on available funding, jurisdictional authority, partner coordination, and project-specific feasibility. Estimated cost and resource needs are provided as planning-level indicators (Low, Medium, High) and reflect relative order-of-magnitude effort rather than project-specific cost estimates.

Actions are designed to support multi-hazard risk reduction, improve the resilience of critical infrastructure and lifelines, and address cascading impacts affecting transportation, utilities, and essential services. Measurable completion criteria are provided to support annual progress tracking, plan maintenance, and updates to future mitigation planning.

[549] Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy and Action Plan Framework. Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook – Mitigation Action Plan Organization and Documentation Guidance.

[550] Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy and Action Plan Framework.

In the FNSB, transportation systems serve as a critical dependency for multiple lifelines, including fuel, food, medical supply delivery, utilities, and emergency response. Disruptions to key corridors may result in cascading impacts across these systems, which are reflected in the mitigation actions identified in this plan.

For planning and tracking purposes, the following timeframes are used consistently throughout the MAP:

- Short Term: 1–3 years
- Medium Term: 3–5 years
- Long Term: 5+ years
- Ongoing: Continuous or recurring activity

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Table 11-1: Multi-Hazard Mitigation Actions

ID	Mitigation Action	Hazard(s) Addressed	Lead Agency	Supporting Agencies	Timeframe	Priority	Implementation Steps	Estimated Cost / Resources	Potential Funding Sources	Measurable Completion Criteria	Status	Stakeholder Input / Rationale
MH 1	Integrate hazard mitigation considerations into capital improvement planning and facility upgrades	All	FNSB Community Planning	FNSB Emergency Operations; City of Fairbanks; City of North Pole; Utilities	Ongoing	High	1) Incorporate hazard risk data into CIP review process 2) Screen capital projects for hazard exposure 3) Document mitigation measures in project design	Medium (staff time, planning integration)	Local CIP budgets; FEMA BRIC; HMGP	Hazard screening process adopted; % of CIP projects incorporating mitigation considerations annually documented	Ongoing	Stakeholders identified aligning mitigation with planned investments to improve feasibility
MH 2	Improve redundancy for critical services (power, communications, water, heat) at essential facilities	All	FNSB Emergency Operations; City of Fairbanks; City of North Pole	Utilities (GVEA, Golden Heart Utilities); Healthcare systems; DOT&PF (coordination)	Medium Term	High	1) Identify critical facilities lacking redundancy 2) Prioritize based on lifeline dependency 3) Develop and implement backup power/heating/communications solutions	High (capital projects)	FEMA BRIC; HMGP; DHS&EM; Utility capital programs	Inventory of facilities completed; number/percent of priority facilities with redundant systems installed	Ongoing	Stakeholders identified the need to support extended duration and cascading incidents
MH 3	Support the development and maintenance of mass casualty and fatality management planning and coordination capabilities	All	FNSB Emergency Operations	Hospitals (FMH); Alaska DHSS; Law Enforcement; EMS; ARC; NGOs	Medium Term	High	1) Develop/update Mass Casualty Plan 2) Identify resource and capacity gaps 3) Conduct training and exercises	Medium (planning + equipment)	ASPR; DHS preparedness grants; EMPG	Plan adopted; resource inventory completed; at least one exercise conducted every 2 years	In Progress	Stakeholders identified the need to improve preparedness for large-scale casualty incidents
MH 4	Coordinate with food suppliers, transportation partners, and community organizations to improve food distribution resilience	All	FNSB Emergency Operations	Local grocers; DOT&PF; Transportation providers; NGOs; NAR-VOAD	Medium Term	High	1) Identify supply chain dependencies 2) Develop contingency distribution plans 3) Coordinate with private-sector partners for emergency operations	Medium (coordination effort)	EMPG; Private sector partnerships; USDA programs	Contingency distribution plan documented; partner coordination agreements or protocols established	In Progress	Stakeholders noted food availability and distribution vulnerabilities during extended incidents
MH 5	Support planning, guidance, and coordination for clean air or filtered spaces during smoke and air quality events	Wildfire; Severe Weather	FNSB Emergency Operations	Alaska DEC; Schools; Healthcare providers; Community organizations	Medium Term	Medium	1) Identify suitable clean air shelter locations 2) Develop public guidance and protocols 3) Integrate into sheltering and response plans	Medium (facility upgrades + outreach)	EPA grants; FEMA BRIC; State public health funding	Identified and mapped clean air facilities; public guidance published; integration into response plans	In Progress	Stakeholders identified smoke impacts and clean air access as a recurring life-safety concern
MH 6	Update vulnerability data for critical facilities and lifelines	All	FNSB Emergency Operations; City of Fairbanks; City of North Pole	Utilities; Healthcare systems; FNSB Community Planning; State agencies	Short Term	High	1) Update GIS-based critical facility inventory 2) Conduct vulnerability assessment 3) Integrate into hazard mitigation and response planning	Medium (analysis/GIS work)	FEMA Risk MAP; BRIC; EMPG	Updated dataset completed; vulnerability assessment documented; used in prioritization and grant applications	Ongoing	Stakeholders identified support prioritization, coordination, and mitigation of grant applications

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ID	Mitigation Action	Hazard(s) Addressed	Lead Agency	Supporting Agencies	Timeframe	Priority	Implementation Steps	Estimated Cost / Resources	Potential Funding Sources	Measurable Completion Criteria	Status	Stakeholder Input / Rationale
MH 7	Coordinate mitigation messaging and outreach across agencies	All	FNSB Emergency Operations/PIO; City of Fairbanks EM/PIO; City of North Pole EM/PIO	FNSB; DFFP; DOT&PF; NWS; NGOs	Ongoing	Medium	1) Align messaging across agencies 2) Develop shared outreach materials 3) Conduct joint campaigns and events	Low (staff coordination)	EMPG; agency budgets	Joint outreach strategy developed; number of coordinated outreach efforts conducted annually	Ongoing	Stakeholders identified it enhances voluntary mitigation, given limited regulatory authority

Source: Fairbanks North Star Borough 2021 Multi-Jurisdictional Hazard Mitigation Plan; stakeholder input; and 2026 Plan Update analyses.

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Table 11-2: Wildfire Mitigation Actions (Wildland Fire and Urban Conflagration (Structure-to-Structure))

ID	Mitigation Action	Hazard(s) Addressed	Lead Agency	Supporting Agencies	Timeframe	Priority	Implementation Steps	Estimated Cost / Resources	Potential Funding Sources	Measurable Completion Criteria	Status	Stakeholder Input / Rationale
WF 1	Implement priority fuel reduction projects identified in the Community Wildfire Protection Plan (CWPP)	Wildland Fire	Alaska Division of Forestry & Fire Protection (DFFP)	FNSB Emergency Operations; Fire Service Areas (FSAs); Federal land managers; Local partners	Medium Term	High	1) Prioritize CWPP-identified treatment areas 2) Conduct fuels reduction (mechanical, prescribed fire) 3) Maintain and monitor treated areas over time	High (project-based, varies by acreage)	USFS grants; FEMA BRIC; HMGP; State forestry programs	Acres treated annually; % of priority CWPP projects completed; maintenance cycle established for treated areas	Ongoing	Strong stakeholder consensus that targeted fuel reduction remains one of the most effective risk reduction measures near communities
WF 2	Improve access and egress in wildfire-prone areas, including evacuation routes and responder access	Wildland Fire; Urban Conflagration	FNSB Community Planning (land use); DOT&PF (state infrastructure); Cities of Fairbanks & North Pole (city infrastructure)	FSAs; Emergency Operations; Developers; Federal partners (where applicable)	Long Term	High	1) Identify high-risk areas with limited access 2) Conduct route vulnerability and constraint assessments 3) Incorporate access improvements into subdivision standards, capital projects, and corridor planning	High (capital improvements, planning + construction)	FHWA; FEMA BRIC; State capital budgets; Local CIP	Identified priority areas mapped; number of access improvement projects initiated or completed; integration into subdivision standards and transport plans	In Progress	Stakeholders identified evacuation safety, responder access, and limited route redundancy as critical constraints; aligns with transportation lifeline dependency concerns
WF 3	Support defensible space education and voluntary compliance by property owners	Wildland Fire; Urban Conflagration	DFFP	FNSB Emergency Operations; FSAs; City of Fairbanks FD; City of North Pole FD; NGOs; Community groups; Insurance partners	Ongoing	High	1) Conduct Firewise outreach and home assessments 2) Provide guidance and materials to property owners 3) Support community-level mitigation efforts (Firewise designation, where feasible)	Medium (education, outreach)	USFS; State Firewise programs; EMPG; Insurance partnerships	Number of outreach events conducted annually; number of properties assessed; increase in defensible space adoption participation	Ongoing	Stakeholders identified limited regulatory authority and importance of voluntary action in reducing structure-to-structure fire spread
WF 4	Enhance wildfire water supply planning, mapping, and access, including draft points, storage options, corridors, and non-FSA areas	Wildland Fire; Urban Conflagration	FNSB Emergency Operations	FSAs; DFFP; Utilities; DOT&PF (corridor coordination); Landowners; Federal agencies	Medium Term	High	1) Inventory and map existing water sources and draft points 2) Identify gaps along transportation corridors and remote areas 3) Develop and implement solutions (storage tanks, dry hydrants, access improvements)	High (infrastructure + planning)	FEMA BRIC; HMGP; State grants; Local CIP; Utility partnerships	Mapped inventory completed; number of new or improved water access points; priority gaps addressed in high-risk areas	In Progress	Stakeholders identified significant gaps in suppression water availability, especially outside FSAs and along critical transportation corridors

Source: Fairbanks North Star Borough 2021 Multi-Jurisdictional Hazard Mitigation Plan; stakeholder input; and 2026 Plan Update analyses.

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Table 11-3: Severe Weather Mitigation Actions

ID	Mitigation Action	Hazard(s) Addressed	Lead Agency	Supporting Agencies	Timeframe	Priority	Implementation Steps	Estimated Cost / Resources	Potential Funding Sources	Measurable Completion Criteria	Status	Stakeholder Input / Rationale
SW 1	Evaluate and improve backup power capacity at critical facilities	Severe Weather (including Winter Rain / Freezing Rain)	FNSB Emergency Operations; City of Fairbanks; City of North Pole	Utilities (GVEA); Healthcare facilities; Schools	Short Term	High	1) Inventory backup power capability at critical facilities 2) Identify gaps and prioritize based on lifeline dependency (heat, medical, water), including facilities vulnerable to extended outages caused by winter rain events 3) Develop and implement upgrades (generators, fuel supply, redundancy)	High (equipment + installation)	FEMA BRIC; HMGP; DHS&EM; Utility capital programs; Local CIP	Inventory completed; priority facilities identified; % of priority facilities with functional backup power systems	In Progress	Stakeholders identified power outages consistently identified as a major cascading impact of severe weather events, including outages associated with winter rain and ice loading on infrastructure
SW 2	Harden communications and information technology systems against extreme cold and severe storms	Severe Weather (including Winter Rain / Freezing Rain)	FNSB, City of Fairbanks, City of North Pole Information Technology; FNSB Emergency Operations	Utilities; Telecommunications providers; State agencies; Healthcare systems	Medium Term	High	1) Identify critical communication and IT systems vulnerable to extreme cold and icing conditions associated with winter rain events 2) Implement hardening measures (backup power, environmental controls, redundancy) 3) Test system resilience through exercises and real-world operations	Medium (system upgrades, redundancy)	DHS cybersecurity grants; FEMA BRIC; EMPG; Agency capital budgets	Critical systems identified; number of systems hardened; successful continuity demonstrated during outages or exercises	In Progress	Stakeholders identified support for continuity of operations during prolonged outages, including those caused by winter rain events and associated infrastructure failures
SW 3	Expand public messaging on cold weather and winter rain preparedness and self-sufficiency	Severe Weather (including Winter Rain / Freezing Rain)	FNSB Emergency Operations/PIO; City of Fairbanks PIO; City of North Pole PIO	National Weather Service (NWS); DOT&PF; Schools; NGOs	Ongoing	Medium	1) Develop consistent cold-weather and winter rain preparedness messaging (travel hazards, outage preparedness, supply disruptions) 2) Coordinate messaging across agencies (transportation, utilities, NWS) 3) Conduct seasonal outreach campaigns and incident-driven communication	Low (staff time, outreach materials)	EMPG; Agency budgets; NWS partnership support	Number of coordinated outreach campaigns annually; consistency of messaging across agencies; increased public engagement metrics where available	Ongoing	Stakeholders identified the importance of community preparedness and self-sufficiency during extended severe weather events, including prolonged icing and disruptions caused by winter rain

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ID	Mitigation Action	Hazard(s) Addressed	Lead Agency	Supporting Agencies	Timeframe	Priority	Implementation Steps	Estimated Cost / Resources	Potential Funding Sources	Measurable Completion Criteria	Status	Stakeholder Input / Rationale
SW 4	Improve the transportation system's resilience to winter rain events	Severe Weather (including Winter Rain / Freezing Rain)	FNSB RSA; DOT&PF; City of Fairbanks Public Works; City of North Pole Public Works	FNSB Emergency Operations, Schools, NWS	Medium Term	High	1) Assess road vulnerabilities to prolonged icing 2) Evaluate and improve de-icing and sanding strategies 3) Prioritize response routes for emergency access and critical services	Medium (operations + materials)	State DOT programs; FEMA BRIC; HMGP; Local CIP	Increased reliability of priority routes during winter weather events; reduced closures and response delays	Proposed	Stakeholders identified hazardous road conditions and prolonged icing as a major impact of winter rain events affecting safety, emergency response, and supply access

Source: Fairbanks North Star Borough 2021 Multi-Jurisdictional Hazard Mitigation Plan; stakeholder input; and 2026 Plan Update analyses.

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Table 11-4: Flood Mitigation Actions

ID	Mitigation Action	Hazard(s) Addressed	Lead Agency	Supporting Agencies	Timeframe	Priority	Implementation Steps	Estimated Cost / Resources	Potential Funding Sources	Measurable Completion Criteria	Status	Stakeholder Input / Rationale
FL 1	Continue National Flood Insurance Program (NFIP) participation and floodplain administration	Flooding	FNSB Community Planning (Floodplain Administrator)	City of Fairbanks; City of North Pole; FEMA Region 10; State DHS&EM	Ongoing	High	1) Maintain compliance with NFIP minimum standards 2) Update and adopt revised FIRMs and Flood Insurance Studies (FIS) 3) Conduct permitting, inspections, and enforcement for floodplain development	Medium (staff time, administration)	FEMA CAP-SSSE; Local budgets; CTP program	NFIP participation maintained; no major compliance violations; updated FIRMs adopted; annual reporting completed	Ongoing	Stakeholders identified a foundational mitigation program that supports flood risk reduction, regulatory compliance, and grant eligibility
FL 2	Identify and prioritize flood-prone critical facilities and infrastructure	Flooding	FNSB Emergency Operations	FNSB Community Planning; City of Fairbanks; City of North Pole; Utilities; State agencies	Medium Term	High	1) Update GIS-based inventory of critical facilities in flood hazard areas 2) Conduct vulnerability and risk assessments 3) Prioritize facilities for mitigation actions and funding	Medium (analysis and planning)	FEMA FMA; BRIC; Risk MAP; EMPG	Updated inventory completed; prioritized list developed; integration into mitigation planning and grant applications	In Progress	Stakeholders identified support for mitigation prioritization and eligibility for flood-related grant programs
FL 3	Promote flood insurance coverage and flood hazard awareness	Flooding	FNSB Community Planning	FNSB Emergency Operations; City of Fairbanks; City of North Pole; Insurance partners; FEMA outreach programs	Ongoing	Medium	1) Provide flood hazard and insurance information at permitting and outreach events 2) Conduct public education campaigns 3) Coordinate messaging with NFIP and CRS objectives (if pursued)	Low (education/outreach)	FEMA outreach support; CRS incentives (if applicable); Local budgets	Number of outreach efforts annually; increased public engagement; continued dissemination of flood risk information at permit stage	Ongoing	Stakeholders identified maintain emphasis on voluntary mitigation and public awareness in areas without regulatory requirements
FL 4	Coordinate with drainage, transportation, and infrastructure partners on flood mitigation opportunities	Flooding	FNSB Public Works / Community Planning	City of Fairbanks; City of North Pole; DOT&PF; Utilities; USACE; NRCS; Partner agencies	Long Term	High	1) Identify flood-prone infrastructure systems and drainage constraints 2) Coordinate multi-agency mitigation opportunities (culverts, drainage, road elevations) 3) Integrate flood mitigation into capital improvement and transportation planning	High (planning + capital improvements)	FEMA BRIC; FMA; FHWA; USACE programs; State capital funding; Local CIP	Number of coordinated projects identified and implemented; integration of flood mitigation into infrastructure projects; documented interagency coordination efforts	In Progress	Stakeholders identified multi-benefit infrastructure investments and coordination across agencies, particularly for drainage and transportation systems

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FL 5	Coordinate with USACE and Fort Knox Mine on flood control infrastructure and dam-related risk considerations	Flood / Infrastructure	FNSB Emergency Operations	USACE; Fort Knox Mine; City of Fairbanks; City of North Pole	Medium Term	Medium	1) Maintain coordination with USACE and Fort Knox Mine 2) Review available risk and operational information related to flood control structures and tailings storage facility 3) Incorporate considerations into planning and emergency preparedness 4) Coordinate information sharing during exercises, incidents, and plan updates	Low (coordination and staff time)	EMPG; FEMA BRIC; DHS&EM; Agency operating budgets	Documented coordination with USACE and Fort Knox Mine; incorporation of dam and flood control considerations into planning documents; inclusion in exercises or planning updates	Proposed	Supports integration of flood control infrastructure and dam-related risk into mitigation planning; reflects stakeholder coordination with USACE and Fort Knox Mine to address low-probability, high-consequence risks

Source: Fairbanks North Star Borough 2021 Multi-Jurisdictional Hazard Mitigation Plan; stakeholder input; and 2026 Plan Update analyses.

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Table 11-5: Seismic Mitigation Actions (Earthquake)

ID	Mitigation Action	Hazard(s) Addressed	Lead Agency	Supporting Agencies	Timeframe	Priority	Implementation Steps	Estimated Cost / Resources	Potential Funding Sources	Measurable Completion Criteria	Status	Stakeholder Input / Rationale
EQ 1	Evaluate the seismic resilience of critical facilities where feasible	Earthquake	FNSB Emergency Operations; City of Fairbanks; City of North Pole	FNSB Community Planning; School District; Healthcare systems; State agencies	Long Term	High	1) Inventory critical facilities and identify priority life-safety facilities 2) Conduct seismic screenings (e.g., Rapid Visual Screening or engineering assessments) 3) Identify retrofit priorities and integration into capital planning	High (engineering assessment + potential retrofits)	FEMA BRIC; HMGP; State capital funding; Local CIP	Number of facilities assessed; prioritized retrofit list developed; integration of findings into capital planning processes	In Progress	Stakeholders identified prioritizing life safety facilities and essential services for seismic resilience
EQ 2	Support the adoption and enforcement of seismic provisions in applicable building codes	Earthquake	City of Fairbanks; City of North Pole	FNSB Community Planning; State of Alaska; Developers; Building officials	Ongoing	High	1) Maintain and update adopted building codes within municipal jurisdictions 2) Enforce seismic provisions during permitting and construction 3) Coordinate with state and regional partners on code adoption consistency	Medium (regulatory implementation)	Local government budgets; State programs	Adoption of updated building codes; documented enforcement through permitting processes; compliance with seismic provisions in new construction	Ongoing	Stakeholders identified apply where municipal authority exists and supports long-term structural risk reduction
EQ 3	Incorporate seismic considerations into emergency response and recovery planning	Earthquake	FNSB Emergency Operations; City of Fairbanks; City of North Pole	Law Enforcement; Fire; EMS; Healthcare systems; State agencies	Short Term	High	1) Integrate seismic scenarios into emergency plans (CEMP, COOP, EOPs) 2) Identify operational impacts (facility damage, access issues, utilities disruption) 3) Conduct exercises and update plans based on after-action findings	Medium (planning + exercises)	EMPG; DHS preparedness grants	Seismic scenarios incorporated into plans; number of exercises conducted; updates made based on after-action reviews	In Progress	Stakeholders identified operational mitigation and preparedness for post-event conditions

Source: Fairbanks North Star Borough 2021 Multi-Jurisdictional Hazard Mitigation Plan; stakeholder input; and 2026 Plan Update analyses.

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Table 11-6: Ground Failure Mitigation Actions (includes Cryosphere)

ID	Mitigation Action	Hazard(s) Addressed	Lead Agency	Supporting Agencies	Timeframe	Priority	Implementation Steps	Estimated Cost / Resources	Potential Funding Sources	Measurable Completion Criteria	Status	Stakeholder Input / Rationale
GF 1	Incorporate ground stability and permafrost considerations into facility and infrastructure planning	Ground Failure (Permafrost, Subsidence)	FNSB Community Planning	FNSB Public Works; City of Fairbanks; City of North Pole; DOT&PF; Utilities; Engineers; Developers	Ongoing	High	1) Integrate ground failure and permafrost risk data into land use, subdivision, and capital project planning 2) Evaluate site conditions during project design 3) Incorporate appropriate mitigation measures (foundation design, drainage, thermal stabilization)	Medium (planning + design considerations)	FEMA BRIC; HMGP; State capital funding; Local CIP	Ground stability considerations incorporated into planning processes; number of projects incorporating mitigation measures; documentation in plan reviews and CIP	Ongoing	Stakeholders identified increasing risks associated with permafrost degradation, thaw settlement, and subsidence affecting infrastructure and development
GF 2	Update mapping and data, where available, to support planning and mitigation decisions	Ground Failure (including permafrost and subsidence)	FNSB Emergency Operations	FNSB Community Planning; University of Alaska Fairbanks (UAF); USGS; State agencies	Medium Term	High	1) Compile and update existing geotechnical, permafrost, and subsidence data 2) Develop or refine hazard maps and GIS datasets 3) Integrate updated data into planning, risk assessments, and mitigation prioritization	Medium (technical analysis and GIS development)	FEMA Risk MAP; BRIC; USGS programs; NSF / research partnerships	Updated datasets completed; hazard maps developed or refined; data integrated into planning and mitigation processes	In Progress	Stakeholders identified data gaps affecting risk assessment, infrastructure planning, and prioritization of mitigation efforts
GF 3	Provide guidance on voluntary mitigation options for property owners in ground failure hazard areas	Ground Failure (Permafrost, Subsidence)	FNSB Community Planning; City of Fairbanks Building Department; City of North Pole Building Department	FNSB Emergency Operations; UAF Extension; Engineers; Builders	Long Term	Medium	1) Develop guidance materials for property owners (foundation design, drainage, thermal management) 2) Conduct outreach and education through public engagement 3) Coordinate with builders and engineers to promote best practices	Medium (education, outreach)	EMPG; State programs; UAF Extension partnerships	Guidance materials developed and distributed; number of outreach efforts conducted; increased awareness of mitigation practices	Ongoing	Stakeholders identified addressing limited regulatory authority and emphasizes education-based and voluntary mitigation approaches in variable site conditions

Source: Fairbanks North Star Borough 2021 Multi-Jurisdictional Hazard Mitigation Plan; stakeholder input; and 2026 Plan Update analyses.

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Table 11-7: Infrastructure, Lifelines, and Supply Chain Mitigation Actions

ID	Mitigation Action	Hazard(s) Addressed	Lead Agency	Supporting Agencies	Timeframe	Priority	Implementation Steps	Estimated Cost / Resources	Potential Funding Sources	Measurable Completion Criteria	Status	Stakeholder Input / Rationale
IL 1	Identify and assess critical lifeline vulnerabilities affecting power, fuel, water, wastewater, communications, and transportation systems	All	FNSB Emergency Operations; City of Fairbanks; City of North Pole	Utilities (GVEA, Golden Heart Utilities); DOT&PF; Healthcare systems; Private infrastructure owners	Ongoing	High	1) Inventory critical lifeline assets and interdependencies 2) Identify single points of failure and cascading risk pathways 3) Develop prioritized vulnerability assessment for mitigation planning	Medium (analysis, coordination)	FEMA BRIC; DHS&EM; EMPG; Infrastructure resilience grants	Lifeline inventory completed; vulnerability assessment developed; priority risks documented and used for planning and grant applications	In Progress	Stakeholders identified interdependencies among lifelines and the need to identify single points of failure
IL 2	Integrate supply chain disruption scenarios into hazard mitigation, emergency operations, and continuity planning	All	FNSB Emergency Operations	City of Fairbanks; City of North Pole; DOT&PF; Utilities; Private sector partners (fuel, food, freight); State agencies	Medium Term	High	1) Identify key supply chains (fuel, food, medical supplies) and dependencies 2) Develop disruption scenarios (route closure, delayed delivery, fuel shortage) 3) Integrate into CEMP, COOP, and hazard mitigation planning	Medium (planning and analysis)	EMPG; DHS preparedness grants; State programs	Supply chain scenarios incorporated into plans; documentation of dependency analysis; inclusion in exercises and planning updates	In Progress	Stakeholders identified reflect Interior Alaska's reliance on limited transportation corridors and long-distance supply chains
IL 3	Reduce the vulnerability of key transportation and freight routes supporting fuel, food, and medical supply delivery	All	DOT&PF (state-owned routes); FNSB (local roads and planning)	City of Fairbanks; City of North Pole; RSAs; Emergency Operations; Utilities; Private freight providers	Long Term	High	1) Identify critical transportation corridors and access routes (highways, bridges, airport access, rail connectivity) 2) Assess vulnerabilities (weather, flooding, maintenance constraints, limited alternatives) 3) Integrate mitigation measures into transportation planning and capital projects (e.g., drainage, elevation, redundancy)	High (capital planning and infrastructure improvements)	FHWA; FEMA BRIC; State capital budgets; DOT&PF programs	Critical routes identified and mapped; vulnerability assessments completed; number of mitigation projects incorporated into transportation plans	In Progress	Stakeholders identified transportation disruptions as a primary driver of cascading impacts and supply chain failure
IL 4	Support continuity planning and redundancy for critical facilities reliant on external fuel, power, and supply deliveries	All	FNSB Emergency Operations; City of Fairbanks; City of North Pole	Utilities; Healthcare systems; Private facility operators	Medium Term	High	1) Identify facilities with dependency on external supply (fuel, medical, logistics) 2) Assess continuity gaps (backup systems, storage capacity) 3) Develop and implement redundancy measures (onsite fuel, backup power, alternate supply arrangements)	High (facility upgrades)	FEMA BRIC; HMGP; DHS/ASPR grants; Facility capital budgets	Priority facilities identified; continuity plans updated; number/percent of facilities with redundancy measures implemented	In Progress	Stakeholders identified maintaining essential services during extended or disrupted supply conditions

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ID	Mitigation Action	Hazard(s) Addressed	Lead Agency	Supporting Agencies	Timeframe	Priority	Implementation Steps	Estimated Cost / Resources	Potential Funding Sources	Measurable Completion Criteria	Status	Stakeholder Input / Rationale
IL 5	Improve information sharing and coordination with private-sector partners during lifeline and supply chain disruptions	All	FNSB Emergency Operations; City of Fairbanks; City of North Pole	Utilities; DOT&PF; Private sector partners; NARVOAD; State agencies	Ongoing	High	1) Establish coordination protocols for lifeline disruption information sharing 2) Maintain contact lists and communication channels 3) Conduct coordination during incidents, exercises, and planning efforts	Low (coordination and communication)	EMPG; Agency budgets	Documented coordination protocols; regular partner engagement; improved information sharing during exercises or incidents	Ongoing	Stakeholders identified the importance of timely, coordinated information exchange across public and private partners

Source: Fairbanks North Star Borough 2021 Multi-Jurisdictional Hazard Mitigation Plan; stakeholder input; and 2026 Plan Update analyses.

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As shown in Tables 11-1 through 11-7, the Mitigation Action Plan includes a range of actions addressing multiple hazards, lifeline systems, and critical dependencies across the Borough. Actions emphasize the protection of life safety, the reduction of risk to critical infrastructure, and the improvement of resilience to cascading impacts on transportation, utilities, and essential services.

The MAP reflects a coordinated, multi-jurisdictional approach that integrates stakeholder priorities, available capabilities, and funding considerations. Implementation is expected to occur incrementally over the life of the plan, supported by partnerships, grant funding opportunities, and alignment with existing planning and capital improvement efforts. This approach ensures that mitigation actions remain feasible, adaptable, and responsive to evolving risks and conditions.

The MAP supports the mitigation goals established in Chapter 10 and provides a structured framework for ongoing plan maintenance, progress tracking, and future updates.

11.5 Prioritization and Implementation Considerations

Mitigation actions included in the MAP were prioritized using qualitative criteria consistent with FEMA guidance and prior FNSB mitigation plans. These criteria support transparent decision-making while recognizing existing authority, capacity, and funding constraints.[551]

Prioritization considerations include:

- Risk reduction and life-safety benefit;
- Protection of critical facilities, lifelines, and essential services;
- Feasibility within existing legal, regulatory, and operational authority;
- Estimated cost, funding eligibility, and implementation complexity; and

[551] Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy, Capability Assessment, and Mitigation Action Plan. Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook – Mitigation Action Plan Prioritization and Maintenance Guidance.

- ★ Ability to address multiple hazards or reduce cascading impacts.[552]

As noted in the 2021 MJ-HMP, the implementation of many mitigation actions depends on external funding availability, grant cycles, and matching requirements. Priority rankings are intended to guide funding pursuit, sequencing, and planning decisions, rather than to establish a mandatory order of implementation or guarantee funding.[553]

11.6 Responsibility for Implementation

Responsibility for implementing mitigation actions is assigned to the agency, jurisdiction, or partner best positioned to carry them out, based on ownership, authority, technical capability, and funding source. Primary and supporting responsibilities are identified in the MAP tables.[554]

The FNSB Emergency Operations Department typically coordinates maintenance of mitigation plans, interagency coordination, and, when applicable, grant oversight. Actual implementation responsibility varies by action and may involve Borough departments, municipalities, fire service areas, utilities, state and federal agencies, non-governmental organizations, or private-sector partners.[555]

Successful implementation depends on continued coordination and partnerships across jurisdictions and sectors, particularly for mitigation actions addressing

[552] Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy, Capability Assessment, and Mitigation Action Plan. Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook – Mitigation Action Plan Prioritization and Maintenance Guidance.

[553] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy, Capability Assessment, and Mitigation Action Plan.

[554] Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy, Capability Assessment, and Mitigation Action Plan.

[555] Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy, Capability Assessment, and Mitigation Action Plan. Fairbanks North Star Borough (FNSB). Interagency Coordination, Emergency Operations, and Partnership Frameworks, 2021–2026.

infrastructure, lifelines, wildfires, urban conflagrations, and extended-duration incidents.[556]

11.7 Monitoring and Maintenance

Progress on mitigation actions will be reviewed through the plan maintenance process described later in this document. During annual reviews and future plan updates, mitigation actions may be updated to reflect:

- Completed actions;
- Actions in progress;
- Actions on hold due to funding, authority, or feasibility constraints; or
- Actions requiring modification based on changing conditions, new information, or lessons learned.[557]

The MAP may be adjusted during plan maintenance activities in accordance with FEMA requirements, ensuring that mitigation priorities remain responsive to evolving risks, capabilities, and opportunities.[558]

Plan effectiveness will be evaluated as part of the plan maintenance process based on mitigation action progress, reduction of identified risks, stakeholder feedback, and continued alignment with community priorities.

11.8 Role in Long-Term Mitigation Strategy

The MAP provides a flexible, implementation-focused framework for advancing the mitigation goals over the five-year planning period. While specific mitigation actions, priorities, and funding opportunities may evolve, the MAP ensures

[556] Fairbanks North Star Borough (FNSB). Interagency Coordination, Emergency Operations, and Partnership Frameworks, 2021–2026.

[557] Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy, Capability Assessment, and Mitigation Action Plan. Federal Emergency Management Agency (FEMA). Hazard Mitigation Plan Maintenance and Update Requirements.

[558] Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook – Mitigation Action Plan Prioritization and Maintenance Guidance. Federal Emergency Management Agency (FEMA). Hazard Mitigation Plan Maintenance and Update Requirements.

continuity between planning cycles and supports sustained progress toward long-term risk reduction.[559]

By emphasizing feasibility, coordination, and incremental implementation, the MAP supports ongoing efforts to reduce vulnerability to natural hazards across the FNSB and participating jurisdictions within existing legal, fiscal, and operational constraints.[560]

11.9 Plan Maintenance and Update Process

11.9.1 Purpose

This section updates the plan maintenance and update process established in the 2021 FNSB MJ-HMP. The purpose of the maintenance process is to ensure that the plan remains current, reflects changes in hazard conditions, risk, and local capability, and continues to meet FEMA mitigation planning requirements throughout the five-year planning cycle.[561]

11.9.2 Responsibility for Plan Maintenance

The FNSB Emergency Operations Department remains responsible for overall coordination of hazard mitigation plan maintenance activities. This role is unchanged from the 2021 MJ-HMP and includes:

- Coordinating annual plan reviews;
- Tracking progress on mitigation actions;
- Facilitating coordination among participating jurisdictions, service areas, and partner agencies; and

[559] Fairbanks North Star Borough (FNSB). Stakeholder Checklist and Mitigation Action Input, 2014 and 2021 Multi-Jurisdictional Hazard Mitigation Plans. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy, Capability Assessment, and Mitigation Action Plan.

[560] Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy, Capability Assessment, and Mitigation Action Plan. Fairbanks North Star Borough (FNSB). Interagency Coordination, Emergency Operations, and Partnership Frameworks, 2021–2026.

[561] Fairbanks North Star Borough (FNSB). 2021 Multi-Jurisdictional Hazard Mitigation Plan – Plan Maintenance and Update Procedures. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy, Action Plan, and Capability Assessment.

- Managing future plan updates and ensuring FEMA compliance.[562]

Participating in municipalities, service areas, and partner agencies support plan maintenance by providing updates on mitigation actions, changes in capability, and emerging hazards as requested.[563]

11.9.3 Annual Review Process

The MJ-HMP will be reviewed annually during the five-year planning period. Annual reviews may be conducted through staff meetings, stakeholder coordination sessions, or other appropriate mechanisms and will focus on:

- Progress toward implementing mitigation actions;
- Changes in risk, hazard conditions, or vulnerability;
- Changes in regulatory, fiscal, or administrative capability; and
- Identification of mitigation actions that may require revision, deferral, or removal.[564]

Findings from annual reviews may be documented internally or incorporated into routine planning, reporting, and grant management activities, as appropriate.[565]

Plan Maintenance Documentation and Tracking

To support consistent documentation, transparency, and FEMA compliance, the FNSB maintains formal plan maintenance tools in Appendix A (Plan Maintenance Documents). These include the Annual Review Questionnaire (Appendix A.2), the Mitigation Action Progress Report (Appendix A.3), the Plan Amendment and Change Log (Appendix A.4), and the Corrective Action and Implementation

[562] Fairbanks North Star Borough (FNSB). 2021 Multi-Jurisdictional Hazard Mitigation Plan – Plan Maintenance and Update Procedures. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy, Action Plan, and Capability Assessment.

[563] Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy, Action Plan, and Capability Assessment.

[564] Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy, Action Plan, and Capability Assessment. Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook – Plan Maintenance, Update, and Amendment Guidance.

[565] Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook – Plan Maintenance, Update, and Amendment Guidance.

Tracking Tool (Appendix A.5). Information collected through the annual stakeholder review process, conducted each September–October, is compiled and used to update mitigation action status, identify new risks or priorities, document implementation challenges, and track corrective actions. Substantive updates, including modifications to mitigation actions, hazard data, or implementation responsibilities, are recorded in the Plan Amendment and Change Log, while identified barriers and follow-up actions are tracked through the Corrective Action Tool. These tools work together to support ongoing monitoring, evaluation, and adaptive management of the plan, consistent with FEMA requirements under 44 CFR §201.6(c)(4), and ensure that progress, challenges, and changes are documented and incorporated into future plan updates.

11.9.4 MAP Updates

The MAP may be updated as part of the annual review process to reflect:

- Completed actions;
- Actions in progress or delayed due to funding, authority, or feasibility constraints;
- Revised priorities based on changing conditions or new information; or
- New mitigation actions identified are consistent with the mitigation goals and strategy.[566]

Minor updates to the MAP that do not constitute a formal plan amendment may be made through established maintenance procedures. Substantive changes will be addressed during a future plan update or formal amendment in accordance with FEMA guidance.[567]

11.9.5 Plan Amendment Procedures

A formal plan amendment may be required if significant changes occur, including:

[566] Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy, Action Plan, and Capability Assessment. Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook – Plan Maintenance, Update, and Amendment Guidance.

[567] Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook – Plan Maintenance, Update, and Amendment Guidance.

- Major changes to mitigation goals, objectives, or strategy;
- Addition of new participating jurisdictions; or
- Incorporation of significant new mitigation initiatives that materially alter the scope or direction of the plan.[568]

Any required plan amendments will be coordinated by the FNSB Emergency Operations Department and submitted to FEMA for review and, as appropriate, approval to maintain plan eligibility for mitigation funding programs.[569]

11.9.6 Five-Year Plan Update

Consistent with FEMA requirements, the MJ-HMP will be formally updated at least once every five years to maintain plan approval and eligibility for certain mitigation funding programs. The update process will include:

- Review of hazards, risks, and vulnerabilities;
- Evaluation of mitigation progress and effectiveness;
- Stakeholder and public involvement; and
- Adoption by participating jurisdictions.[570]

The current Plan Update reflects this required five-year review and incorporates implementation experience and lessons learned from prior planning cycles.[571]

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[568] Fairbanks North Star Borough (FNSB). 2021 Multi-Jurisdictional Hazard Mitigation Plan – Plan Maintenance and Update Procedures. Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook – Plan Maintenance, Update, and Amendment Guidance.

[569] Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook – Plan Maintenance, Update, and Amendment Guidance.

[570] Fairbanks North Star Borough (FNSB). 2021 Multi-Jurisdictional Hazard Mitigation Plan – Plan Maintenance and Update Procedures. Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook – Plan Maintenance, Update, and Amendment Requirements.

[571] Fairbanks North Star Borough (FNSB). 2021 Multi-Jurisdictional Hazard Mitigation Plan – Plan Maintenance and Update Procedures. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy, Action Plan, and Maintenance Process.

11.9.7 Public Involvement

Opportunities for public involvement will be provided during future plan updates and, where feasible, during significant plan maintenance activities. Public input helps ensure that mitigation priorities reflect community concerns and support continued awareness of natural hazard risks throughout the FNSB.[572]

During the 2026 update process, public involvement included surveys, public meetings, open houses, outreach events, and opportunities for comment, which informed mitigation priorities and action refinement.

11.9.8 Continued Applicability

The plan maintenance process is designed to ensure that the MJ-HMP remains a usable, relevant planning document rather than a static report. Through routine review, coordination, and periodic updates, the plan will continue to support informed mitigation decision-making across the FNSB and participating jurisdictions.[573]

Together, the mitigation strategy, goals, and MAP provide a coordinated framework for reducing risk and enhancing resilience across the FNSB.

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[572] Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy, Action Plan, and Maintenance Process. Federal Emergency Management Agency (FEMA). Local Mitigation Planning Handbook – Plan Maintenance, Update, and Amendment Requirements.

[573] Fairbanks North Star Borough (FNSB). 2021 Multi-Jurisdictional Hazard Mitigation Plan – Plan Maintenance and Update Procedures. Fairbanks North Star Borough (FNSB). 2026 Multi-Jurisdictional Hazard Mitigation Plan Update – Mitigation Strategy, Action Plan, and Maintenance Process.

12. List of Acronyms

The following are acronyms used in this document.

Acronym	Full Name
ACCAP	Alaska Center for Climate Assessment and Preparedness
ACOE	Army Corps of Engineers
ACRC	Alaska Climate Research Center
ACS	American Community Survey
ADEC	Alaska Department of Environmental Conservation
ADOLWD	Alaska Department of Labor and Workforce Development
ADRC(s)	Aging and Disability Resource Center(s)
AEIC	Alaska Earthquake Information Center
AFB	Air Force Base
AFS	Alaska Fire Service
AICC	Alaska Interagency Coordination Center
AIWFMP	Alaska Interagency Wildland Fire Management Plan
AMAC	Alaska Multi-Agency Coordination Group
ANC	Alaska Native Corporations
ANCSA	Alaska Native Claims Settlement Act
ARRA	American Recovery and Reinvestment Act
ARRC	Alaska Railroad Corporation
ARSC	Arctic Region Supercomputing Center
ASHSC	Alaska Seismic Hazard Safety Commission
AST	Alaska State Troopers
ATSDR	Agency for Toxic Substances and Disease Registry
AURA	Arctic Urban Risks and Adaptations
AWFCG	Alaska Wildland Fire Coordinating Group
BACH	Bassett Army Community Hospital
BESS	Battery Energy Storage System
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BRIC	Building Resilient Infrastructure and Communities
CAIHC	Chief Andrew Isaac Health Center
CCHRC	Cold Climate Housing Research Center
CDC	Centers for Disease Control and Prevention Agency
CDP	Census Designated Place
CEDS	Comprehensive Economic Development Strategy
CEMP	Comprehensive Emergency Management Plan
CFR	Code of Federal Regulations
cfs	cubic feet per second

Acronym	Full Name
CGFR	Chena-Goldstream Fire and Rescue
CIP	Capital Improvement Plan
CMZ	Channel Migration Overlay Zone
CPG	Comprehensive Preparedness Guide
CWPP	Community Wildfire Protection Plan
DCCRA	Department of Commerce, Community, and Regional Affairs
DCRA	Division of Community and Regional Affairs
DFFP	Division of Forestry & Fire Protection
dFIRM	Digital Flood Insurance Rate Map
DGGS	Division of Geological and Geophysical Surveys
DHS	Department of Homeland Security
DHS&EM	Division of Homeland Security and Emergency Management
DMA 2000	Disaster Mitigation Act of 2000
DNR	Department of Natural Resources
DOD	Department of Defense
DOI	Department of Interior
DOT&PF	Department of Transportation and Public Facilities
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EOP(s)	Emergency Operations Plan(s)
ESS	Emergency Services Sector
EVFD	Ester Volunteer Fire Department
FDL	Frozen Debris Lobes
FECC	Fairbanks Emergency Communications Center
FEMA	Federal Emergency Management Agency
FEPC	Fairbanks Local Emergency Planning Committee
FFP	Fairbanks Fire Department
FHP	Foundation Health Partners
FIA	Fairbanks International Airport
FIA-FD	Fairbanks International Airport Fire Department
FIA-PD	Fairbanks International Airport Police Department
FIRM(s)	Flood Insurance Rate Map(s)
FIS	Flood Insurance Study
FMA	Flood Mitigation Assistance
FMH	Fairbanks Memorial Hospital
FNSB	Fairbanks North Star Borough
FNSBC	Fairbanks North Star Borough Code
FNSBSD	Fairbanks North Star Borough School District
FPD	Fairbanks Police Department
FSA(s)	Fire Service Area(s)

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Acronym	Full Name
FSW	Fairbanks Sewer and Water
GIS	Geographic Information System
GVEA	Golden Valley Electric Association
HazMat	Hazardous Materials
HEC-RAS	Hydrological Engineering Center River Analysis System
HMA	Hazard Mitigation Assistance
HMGP	Hazard Mitigation Grant Program
HMRT	Hazardous Materials Response Team
HPH	Healthcare and Public Health Sector
HVA(s)	Hazard Vulnerability Analysis
IABA	Interior Alaska Builders Association
IARC	International Arctic Research Center
IBC	International Building Code
ICC	International Code Council
ICHC	Interior Community Health Center
ICHR	Ignition Component Hazard Rating
ICU	Intensive Care Unit
IFC	International Fire Code
IGU	Interior Gas Utility
IRHA	Interior Regional Housing Authority
ISER	Institute of Social and Economic Research
JPARC	Joint Pacific Alaska Range Complex
LFD	Letter of Final Determination
LiDAR	Light Detection and Ranging
LLC	Limited Liability Corporation
LNG	Liquefied Natural Gas
LOMR(s)	Letter of Map Revision(s)
LP	Legislative Priorities
MAP	Mitigation Action Plan
MJ-HMP	Multi-Jurisdictional Hazard Mitigation Plan
MMI	Modified Mercalli Intensity
MW	Megawatt
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Association
NGO(s)	Non-Governmental Organization(s)
NOAA	National Oceanic and Atmospheric Administration
NPFD	North Pole Fire Department
NPPD	North Pole Police Department
NRCS	Natural Resources Conservation Service
NSVFD	North Star Volunteer Fire Department

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Acronym	Full Name
NWS	National Weather Service
OIPC	Office of Intellectual Property and Commercialization
PDM	Pre-Disaster Mitigation
PGA	Peak Ground Acceleration
PMR	Physical Map Revision
PSAP	Public Safety Answering Point
PSHA	Probabilistic Seismic Hazard Analyses
RESAC	Regional Emergency Services Advisory Committee
Risk MAP	Risk Mapping, Assessment, and Planning
RL	Repetitive Loss
RSA(s)	Road Service Area(s)
SFHA(s)	Special Flood Hazard Area(s)
SNAP	Sustainable Natural Alternative Power Program
SPR	Stakeholder Preparedness Review
SRL	Severe Repetitive Loss
SVFD	Steese Area Volunteer Fire Department
SVI	Social Vulnerability Index
TAPS	Trans Alaska Pipeline
TCC	Tanana Chiefs Council
tcf	trillion cubic feet
THIRA	Threat Hazard Identification and Risk Analysis
UAF	University of Alaska Fairbanks
UCM	Usibelli Coal Mine
UFD	University Fire Department
UPD	University Police Department
U.S.	United States
USDA	United States Department of Agriculture
USF&W	United States Fish and Wildlife Service
USGS	United States Geological Survey
VIP	Volunteers in Policing
WFO	Weather Forecast Office
WRN	Weather Ready Nation
WUI	Wildland Urban Interface

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Annex 1: Supply Chain Disruptions Hazard Profile

Supply chain disruptions occur when the movement of food, fuel, medical supplies, and other essential goods into the Fairbanks North Star Borough (FNSB) is delayed, reduced, or interrupted. Interior Alaska is especially vulnerable to these disruptions due to its geographic isolation, reliance on long-distance transportation networks, and limited redundancy in freight delivery systems. Even short-term interruptions can have immediate impacts on households, businesses, and critical services, especially during winter conditions.

1.1 Nature and Location

The FNSB depends heavily on external supply chains for food, fuel, medical supplies, and consumer goods. A significant portion of these goods originates from distribution centers in the Pacific Northwest, particularly the Seattle metropolitan area, and is transported to Interior Alaska primarily via the Alaska Highway.

The Alaska Highway serves as the primary overland freight corridor connecting the contiguous United States to Interior Alaska. This route traverses Canada for much of its length and involves international border crossings, reliance on Canadian transportation infrastructure, and exposure to regulatory and operational constraints outside U.S. jurisdiction.

Key characteristics that define the hazard include:

- Dependence on a single primary overland transportation corridor for freight delivery
- Reliance on international border crossings and cross-border trucking operations
- Exposure to extreme weather, infrastructure limitations, and long transit distances
- Limited redundancy in the regional supply chain and distribution systems

As a result, disruptions occurring well outside the Borough, such as in Canada or the Pacific Northwest, can quickly affect the availability of essential goods locally.

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Figure 1-1: Supply Chain Map



Source: Fairbanks North Star Borough GIS and Fairbanks North Star Borough Department of Emergency Operations, Retrieved 6/4/2026.

1.2 Historical Occurrence

Supply chain disruptions are typically not documented as standalone disaster events but have occurred as secondary impacts of other hazards, including severe weather, flooding, wildfires, transportation interruptions, labor shortages, and national or global supply constraints.

Within Interior Alaska, past disruptions have resulted in:

- Temporary shortages of food and household goods
- Delayed deliveries of essential commodities
- Increased costs and reduced availability of products
- Reduced reliability of fuel and medical supply deliveries

Recent global and national events, including pandemic-related disruptions and transportation system constraints, have demonstrated the sensitivity of Interior Alaska's supply chains to external conditions and long-distance logistics.

1.3 Possible Impacts from Future Events

Future supply chain disruptions may have rapid and widespread impacts across the FNSB due to the limited buffering capacity in local distribution systems.

Potential impacts include:

- Reduced availability of food and essential goods
- Increased prices and reduced product variety
- Delays in fuel delivery are affecting heating, transportation, and electric power generation
- Disruptions to medical supply deliveries affecting healthcare facilities and pharmacies
- Reduced operational capacity of critical infrastructure and essential services
- Increased hardship for vulnerable populations, including seniors and individuals with medical needs

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Food distribution within the Borough is concentrated among a small number of major retailers that rely on frequent, just-in-time resupply shipments and maintain limited on-site storage capacity. Prolonged supply disruptions could therefore escalate rapidly from localized shortages to broader community impacts.

Additionally, supply chain disruptions may create cascading effects, including strain on emergency services, public health systems, and community resilience, particularly during extreme weather or extended-duration events.

1.4 Probability of Future Events

Supply chain disruptions are considered to have a moderate to high probability of occurrence within the FNSB.

This assessment is based on:

- Geographic isolation from major supply centers
- Dependence on a single primary overland freight route
- Exposure to external events outside local control
- Limited redundancy in transportation and logistics systems

The likelihood of disruptions increases during:

- Severe weather events
- Infrastructure damage (roads, bridges, ports, rail systems)
- Wildfire activity affecting transportation corridors
- Workforce shortages in transportation or logistics sectors
- National or global supply constraints

The severity of impacts is greatest during winter months, when communities are highly dependent on regular deliveries of fuel, food, and essential goods for life safety.

1.5 Climate-Informed Risk Considerations

Climate conditions are expected to increase both the likelihood and consequences of

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supply chain disruptions affecting the FNSB.

Interior Alaska's reliance on long-distance transportation corridors makes it vulnerable to disruptions caused by extreme weather and environmental changes occurring across Alaska, Canada, and the Lower 48.

Key climate-related risk factors include:

- Increased frequency and severity of wildfires, flooding, and severe storms affecting transportation routes
- Permafrost degradation, erosion, and ground instability are impacting road infrastructure along the Alaska Highway and other corridors
- Damage to bridges, highways, rail systems, ports, and distribution hubs
- Increased likelihood of temporary closures, load restrictions, or reduced transportation capacity

Disruptions to ports, fuel production facilities, and distribution centers serving Alaska may also produce cascading supply chain effects that extend into Interior Alaska.

Taken together, these factors indicate that climate conditions will likely:

- Increase the frequency of disruptions
- Extend the duration of supply interruptions
- Amplify impacts on communities, infrastructure, and essential services

1.6 Existing Hazard Actions

Current efforts that help reduce the impacts of supply chain disruptions include:

- Coordination with private-sector retailers, distributors, and fuel providers
- Public information and communication during shortages or delivery delays
- General emergency preparedness and continuity planning
- Monitoring of transportation conditions and infrastructure status

However, most supply systems remain privately operated with limited local stockpiling or

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redundancy, leaving the Borough vulnerable to prolonged or cascading disruptions.

Future planning efforts, including integration into emergency operations planning, will focus on improving coordination, situational awareness, and resilience to supply chain disruptions affecting critical commodities.

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Appendix A. Plan Maintenance Documents

Appendix A provides the tools, documentation, and supporting materials used to implement, monitor, and maintain the Fairbanks North Star Borough (FNSB) Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP). This appendix supports the plan maintenance process described in Section 11.9 by documenting stakeholder involvement and providing standardized tools for annual review, mitigation action tracking, and plan updates. Materials included in this appendix consist of the stakeholder list supporting plan development and maintenance (Section A.1), the Annual Review Questionnaire used to collect ongoing input from participating jurisdictions and partners (Section A.2), the Mitigation Action Progress Report for tracking implementation status (Section A.3), the Plan Amendment and Change Log documenting updates between plan cycles (Section A.4), and the Corrective Action and Implementation Tracking Tool used to address barriers and support adaptive management (Section A.5). Together, these tools ensure continued coordination among jurisdictions, support annual evaluation of hazards and mitigation actions, and maintain compliance with FEMA requirements for plan monitoring, evaluation, and updating.

A.1 Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP) Stakeholders

Agency	Representative	Title
Alaska Center for Climate Assessment and Preparedness (ACCAP) / University of Alaska Fairbanks (UAF)	Eleanor Greenbaum	Policy Fellow
Alaska Department of Environmental Conservation (ADEC)	Kimberly Maher	Northern Region Manager
Alaska Department of Health (DOH)	Jeannette Gorda	Public Health Preparedness Nurse III
Alaska Department of Transportation and Public Facilities (DOT&PF)	Amber Shumpert	Statewide Safety System Manager

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Agency	Representative	Title
Alaska Department of Transportation and Public Facilities (DOT&PF)	Colby Kusinitz	Northern Region Safety Officer
American Red Cross (ARC)	Alana Wilson	Community Disaster Program Manager
American Red Cross (ARC)	Lyman Ketcham	Volunteer
Aurora Energy	Phillip Begley	General Manager
Bureau of Indian Affairs (BIA)	Bjorn Burgeson	Fire Management Specialist
Chena Goldstream Fire and Rescue (CGFR)	Chief Frank Bracken	Fire Chief
City of Fairbanks Administration	Mike Sanders	Chief of Staff
Department of Homeland Security and Emergency Management (DHS&EM)	Garrett Brooks	State Hazard Mitigation Officer
Department of Homeland Security and Emergency Management (DHS&EM)	John Andrews	Hazard Mitigation Planner
Department of Homeland Security and Emergency Management (DHS&EM)	Todd Russell	Hazard Mitigation Grant Program, Emergency Management Specialist II
Ester Volunteer Fire Department (EVFD)	Chief Jeff Conner	Fire Chief
Fairbanks City Council	Sue Sprinkle	Council Member
Fairbanks Fire Department	Chief Andrew Coccaro	Fire Chief
Fairbanks North Star Borough (FNSB) Assembly	David Guttenberg	Assembly Member
Fairbanks North Star Borough (FNSB) Community Planning	Kellen Spillman	Director
Fairbanks North Star Borough (FNSB) Community Planning	Melissa Kellner	Deputy Director
Fairbanks North Star Borough (FNSB) Digital Services	David Morin	GIS Technician
Fairbanks North Star Borough (FNSB) Digital Services	Steven Hall	GIS Technician

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Agency	Representative	Title
Fairbanks North Star Borough (FNSB) Emergency Operations	Boston Thomas	Emergency Management Intern
Fairbanks North Star Borough (FNSB) Emergency Operations	Colby Kusinitz	Former Emergency Management Coordinator
Fairbanks North Star Borough (FNSB) Emergency Operations	Iain Miller	Emergency Services Manager
Fairbanks North Star Borough (FNSB) Emergency Operations	Daniel Weatherly	Emergency Services GIS Tech
Fairbanks North Star Borough (FNSB) Mayor's Office	Amy Gallaway	Deputy Chief of Staff
Fairbanks North Star Borough (FNSB) Mayor's Office	Kuba Grzeda	Chief of Staff
Fairbanks North Star Borough (FNSB) Mayor's Office	Tom Hewitt	Special Assistant
Fairbanks North Star Borough (FNSB) Mayor's Office	Kaitlin Wilson	Public Information Officer
Fairbanks Resource Agency (FRA)	Wendy Cloyd	Community Development Director
Fort Wainwright	Charles Mercer	Emergency Manager
Fort Wainwright	Ernest Decker	ATO
Foundation Health Partners (FHP)	Kelley Scott	Emergency Program Manager
Foundation Health Partners (FHP)	Keith Fehr	FAC Operations Director
Interior Gas Utility (IGU)	Elena Sudduth	General Manager
Interior Region Emergency Medical Services Council, Inc. (IREMSC)	Justin Perkins	Executive Director
North Pole Fire Department (NPPD)	Chief Chad Heineken	Fire Chief / Emergency Manager
North Pole Police Department (NPPD)	Chris Illingworth	Public Safety Assistant
North Star Volunteer Fire Department (NSVFD)	Chief Geoff Coon	Fire Chief

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Agency	Representative	Title
North Star Volunteer Fire Department (NSVFD)	Kevin Harvey	Deputy Fire Chief
Northern Alaska Region Volunteers Active in Disasters (NAR-VOAD)	Wendy Brighton	Secretary
Steese Volunteer Fire Department (SVFD)	Chief Scott Learned	Fire Chief
Tanana Chiefs Conference (TCC)	Felisha Cooper	Health and Safety Officer
University of Alaska Fairbanks (UAF)	Kate Janoski	Emergency Manager
University of Alaska Fairbanks (UAF)	Steve Mullins	Continuity and Resiliency Director
University of Alaska Fairbanks (UAF)	Raina Collins	Senior IT Risk and Compliance Analyst
University Police Department (UPD)	Chief Max Becker	Police Chief
University Police Department (UPD)	Nicole Becker	Dispatch Supervisor
Volunteers in Policing (VIPS)	Felina Kelly	Volunteers In Policing Coordinator
Community Member – Amateur (HAM) Radio	John Antonik	Retired

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A.2 Annual Review Questionnaire

Fairbanks North Star Borough

Hazard Mitigation Plan (HMP) Annual Review Questionnaire

Stakeholder / Subject Matter Expert (SME) Input Form

This questionnaire supports the annual update of the FNSB Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP).

Estimated time: 20–30 minutes

How to Complete This Questionnaire

- This questionnaire is designed for all hazard mitigation partners, including utilities, fire, transportation, military, healthcare, and planning agencies.
- Not all questions will apply to every respondent. Please complete only those relevant to your organization.
- Brief responses or bullet points are sufficient.
- Your input will directly inform updates to hazard risk, mitigation priorities, and FEMA compliance.

Return to: EmergencyManagement@fnsb.gov

Due Date: October 15th

Section 1 – Respondent Information

Name: _____

Agency / Organization: _____

Email / Phone: _____

Role / Discipline (check all that apply):

☐ Fire / EMS
☐ Healthcare / Public Health
☐ Law Enforcement
☐ Military Installation
☐ Planning / GIS
☐ Public Works / DOT
☐ Tribal / Community Organization
☐ Utilities (electric, gas, water, telecom)
☐ Other: _____

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Section 2 – Hazard Events and Changes (Last 12 Months)

1. Did your agency experience or respond to any hazard events?

   ☐ Yes ☐ No

If yes, check all that apply:

☐ Wildland Fire
☐ Urban Conflagration (structure-to-structure fire)
☐ Flooding / Breakup
☐ Severe Weather (snow, wind, extreme cold, freezing rain in winter, heat)
☐ Earthquake
☐ Infrastructure Failure (power, fuel, telecom)
☐ Hazardous Materials
☐ Public Health / Pandemic
☐ Ground Failure (sinkhole, erosion, landslide)
☐ Other: _____

Briefly describe impacts (damage, service disruptions, response challenges):

_____

_____

_____

2. Have you observed any increasing or emerging risks? (Check all that apply)

   ☐ Increased wildfire risk
   ☐ Permafrost thaw / ground instability
   ☐ Flooding changes
   ☐ Infrastructure strain or aging systems
   ☐ Supply chain disruptions
   ☐ Power reliability issues
   ☐ Climate-related impacts
   ☐ Other: _____

Comments:

_____

_____

_____

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3. Have you experienced cascading or combined events?

   (Example: wildfire → power outage → air quality impacts)

   ☐ Yes ☐ No

If yes, briefly describe:

_____

_____

_____

Section 3 – Infrastructure, Facilities, and Vulnerabilities

4. Have there been changes to critical facilities or infrastructure in your jurisdiction?

   ☐ Yes ☐ No

If yes, check all that apply:

☐ New facilities or infrastructure
☐ Facility upgrades or expansions
☐ Facility closures or degradation
☐ Changes to service areas

Describe:

_____

_____

_____

5. Did any infrastructure or services experience disruption during hazard events?

   ☐ Yes ☐ No

Check affected systems:

☐ Power / Electricity
☐ Fuel / Energy supply
☐ Roads / Transportation
☐ Communications / Telecom
☐ Water / Wastewater
☐ Healthcare services
☐ Emergency response services
☐ Other: _____

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Describe impacts:

6. Have you observed changes in development or land use that may affect risk?

   ☐ Yes ☐ No

Describe changes (Examples: expansion into wildfire areas, floodplain development, hillside development):

Section 4 – Mitigation Actions and Needs

7. Are current mitigation priorities still appropriate?

   ☐ Yes ☐ No ☐ Unsure

8. What mitigation actions should be prioritized in your sector? (Check up to 5)

   ☐ Fuel reduction / defensible space
   ☐ Flood protection / drainage improvements
   ☐ Infrastructure hardening
   ☐ Backup power / redundancy
   ☐ Communication systems improvements
   ☐ Emergency planning / evacuation routes
   ☐ Public preparedness education
   ☐ Protection of critical facilities
   ☐ Nature-based solutions
   ☐ Other: _____

9. Identify any new mitigation projects or ideas:

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10. Are there funding or resource opportunities available for mitigation?

    ☐ Yes ☐ No ☐ Unsure

If yes:

☐ Federal (FEMA BRIC/HMGP)
☐ State
☐ Local
☐ Private / partnerships

Comments:

Section 5 – Implementation and Coordination

11. Is your agency currently implementing mitigation actions from the MJ-HMP?

    ☐ Yes ☐ No

If yes, briefly list:

12. What challenges are limiting mitigation implementation?

    ☐ Funding
    ☐ Staffing
    ☐ Technical capacity
    ☐ Regulatory / permitting
    ☐ Coordination between agencies
    ☐ Other: _____

13. Does your agency integrate hazard mitigation into planning? (Check all that apply)

    ☐ Capital Improvement Plan (CIP)
    ☐ Comprehensive / Land Use Plan
    ☐ Emergency Operations Plan (EOP)
    ☐ Facility / infrastructure planning
    ☐ Not currently integrated

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Section 6 – FNSB-Specific Considerations

14. For your sector, which risks are most concerning in the FNSB region? (Check top 3)

☐ Wildfire and smoke impacts
☐ Extreme cold and winter storms
☐ Flooding / breakup
☐ Earthquake
☐ Power / fuel disruption
☐ Permafrost / ground failure
☐ Transportation disruption
☐ Supply chain issues
☐ Other: _____

15. Are there coordination needs with the following partners? (Check all that apply)

☐ Fire service agencies
☐ Utilities (GVEA, IGU, etc.)
☐ Alaska DOT / transportation agencies
☐ Military installations (Ft. Wainwright, Eielson AFB)
☐ Healthcare providers
☐ Tribal organizations
☐ Schools / University (UAF)
☐ Other: _____

Describe coordination gaps:

_____

_____

_____

Section 7 – Equity and Community Considerations

16. Have you observed populations that are more vulnerable to hazards?

☐ Yes ☐ No (Check all that apply)

☐ Rural or remote residents
☐ Elderly populations
☐ Low-income households
☐ Limited mobility populations
☐ Areas with limited infrastructure
☐ Other: _____

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17. What actions would improve community resilience?

Section 8 – Final Input

18. Top 3 mitigation priorities for the next 5 years:

    1.
    2.
    3.

19. Additional comments or recommendations:

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A.3 Mitigation Action Progress Report

Fairbanks North Star Borough

Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP)

Mitigation Action Progress Report

Instructions

This form is used to track progress on mitigation actions identified in the FNSB Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP).

Who should complete this: Agencies or partners responsible for implementing mitigation projects.

Return to: EmergencyManagement@fnsb.gov

Reporting Period: _____

Section 1 – Project Information

Project Title: _____

Project ID (if applicable): _____

Hazard(s) Addressed (check all that apply):

- ☐ Wildland Fire
- ☐ Flooding
- ☐ Severe Weather / Extreme Cold
- ☐ Earthquake
- ☐ Infrastructure Failure
- ☐ Hazardous Materials
- ☐ Other: _____

Project Location (general area): _____

Section 2 – Responsible Agency

Agency / Organization: _____

Primary Contact Name: _____

Title: _____

Phone / Email: _____

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Supporting Agencies / Partners:

Section 3 – Project Description

Brief description of the mitigation project:

Purpose (what risk does this reduce?):

Population / assets benefiting (if applicable):

Section 4 – Schedule and Status

Date of Project Approval: _____

Project Start Date: _____

Current Status (check one):

- ☐ Planning / Design
- ☐ In Progress
- ☐ Delayed
- ☐ Completed
- ☐ Canceled

Estimated % Complete: _____ %

Anticipated Completion Date: _____

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Section 5 – Milestones

Milestone	Status (Complete/In Progress)	Expected Completion Date
_____	_____	_____
_____	_____	_____
_____	_____	_____

Section 6 – Funding and Cost

Total Project Cost (estimate or actual): _____

Funding Sources (check all that apply):

- ☐ Federal (FEMA – BRIC / HMGP / other)
- ☐ State
- ☐ Local
- ☐ Private / Utility
- ☐ Other: _____

Cost Status:

- ☐ On Budget
- ☐ Over Budget (explain below)
- ☐ Under Budget

Comments:

_____

_____

_____

Section 7 – Progress Summary

A. Accomplishments During This Reporting Period

_____

_____

_____

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B. Challenges / Obstacles (Check all that apply)

- ☐ Funding gaps
- ☐ Staffing limitations
- ☐ Permitting / regulatory issues
- ☐ Weather / seasonal impacts
- ☐ Supply chain delays
- ☐ Coordination between agencies
- ☐ Other: _____

Explanation:

C. Actions Taken to Address Challenges

D. Next Steps (Next Reporting Period)

Section 8 – Outcomes and Benefits

What risk reduction or benefit has been achieved so far?

(Examples: reduced wildfire risk, improved response time, increased reliability)

Does this project improve resilience of critical systems? (Check all that apply)

- ☐ Power / energy
- ☐ Transportation
- ☐ Communications
- ☐ Water / Wastewater
- ☐ Emergency response
- ☐ Healthcare
- ☐ Other: _____

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Section 9 – Integration and Coordination

Is this project being integrated into other plans or programs? (Check all that apply)

- ☐ Capital Improvement Plan (CIP)
- ☐ Comprehensive / land use plan
- ☐ Emergency Operations Plan
- ☐ Infrastructure planning
- ☐ Not integrated

Coordination with other agencies (if applicable):

Section 10 – Additional Considerations

Does this project address future or changing risks (e.g., climate, growth)?

☐ Yes ☐ No ☐ Unsure

Lessons learned or recommendations:

Section 11 – Additional Comments

Updates identified through mitigation action tracking should be documented in the Plan Amendment and Change Log (Appendix A.4) to support ongoing plan maintenance and future updates.

Identified challenges and implementation barriers should be tracked and addressed using the Corrective Action Tracking Tool (Appendix A.5).

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A.4 Plan Amendment and Change Log

This log documents all substantive updates, revisions, and amendments to the FNSB Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP) between formal five-year plan updates. Maintaining this record ensures transparency, supports FEMA compliance, and provides continuity for future plan updates.

Plan amendments may result from:

- Annual stakeholder review meetings
- Updated hazard data or risk assessments
- Changes in community development, infrastructure, or vulnerabilities
- Updates to mitigation actions or priorities
- Completion, modification, or removal of mitigation actions
- Changes in jurisdictional responsibilities or capabilities
- Integration with other plans (e.g., CEMP, CWPP)

Minor updates (administrative corrections, formatting, or clarifications) may be documented in this log without requiring formal adoption of the plan. Major amendments affecting mitigation strategy, risk assessment, or jurisdictional participation must follow the formal amendment and adoption process described in Section 11.9.

Plan Maintenance Schedule Reference

- Annual Review Period: September–October (Stakeholder Meeting and Questionnaire Distribution)
- Annual Report Compilation: November–December
- Five-Year Update Initiation: 2030
- Next Full Plan Update Due: 2031

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Plan Amendment / Change Log Table

Date	Section / Table Updated	Type of Change	Description of Change	Trigger / Source	Lead Agency	Approval Status	Notes
MM/DD/YYYY	*(e.g., Table 11-7, Section 4.5)*	*☐ Minor Update* *☐ Major Amendment*	*Brief description of revision (e.g., added new mitigation action, updated hazard data, revised timeline)*	*☐ Annual Review* *☐ Stakeholder Input* *☐ New Data* *☐ Project Completion* *☐ Other*	*(e.g., FNSB Emergency Management)*	*☐ Documented Only* *☐ Pending Approval* *☐ Approved by Assembly/Council* *☐ Submitted to FEMA*	*Additional context or cross-reference*
		☐ Minor Update ☐ Major Amendment		☐ Annual Review ☐ Stakeholder Input ☐ New Data ☐ Project Completion ☐ Other		☐ Documented Only ☐ Pending Approval ☐ Approved by Assembly/Council ☐ Submitted to FEMA	
		☐ Minor Update ☐ Major Amendment		☐ Annual Review ☐ Stakeholder Input ☐ New Data ☐ Project Completion ☐ Other		☐ Documented Only ☐ Pending Approval ☐ Approved by Assembly/Council ☐ Submitted to FEMA	
		☐ Minor Update ☐ Major Amendment		☐ Annual Review ☐ Stakeholder Input ☐ New Data ☐ Project Completion ☐ Other		☐ Documented Only ☐ Pending Approval ☐ Approved by Assembly/Council ☐ Submitted to FEMA	
		☐ Minor Update ☐ Major Amendment		☐ Annual Review ☐ Stakeholder Input ☐ New Data ☐ Project Completion ☐ Other		☐ Documented Only ☐ Pending Approval ☐ Approved by Assembly/Council ☐ Submitted to FEMA	
		☐ Minor Update ☐ Major Amendment		☐ Annual Review ☐ Stakeholder Input ☐ New Data ☐ Project Completion ☐ Other		☐ Documented Only ☐ Pending Approval ☐ Approved by Assembly/Council ☐ Submitted to FEMA	
		☐ Minor Update ☐ Major Amendment		☐ Annual Review ☐ Stakeholder Input ☐ New Data ☐ Project Completion ☐ Other		☐ Documented Only ☐ Pending Approval ☐ Approved by Assembly/Council ☐ Submitted to FEMA	

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Change Type Definitions

- Minor Update: Administrative or non-substantive changes that do not alter the overall mitigation strategy or plan structure (e.g., updated status, corrected data, clarified language).
- Major Amendment: Substantive changes that affect mitigation strategy, risk assessment findings, jurisdictional participation, or plan structure. These require formal review, adoption, and potential FEMA approval.

Guidance for Use

- This log should be updated annually following the stakeholder review process.
- Entries should align with updates identified through:
    - Annual Review Questionnaire (Appendix A.2)
    - Mitigation Action Progress Reports (Appendix A.3)
- All participating jurisdictions should coordinate updates through FNSB Emergency Management.
- The log should be maintained as part of the official plan record and included in future plan updates.

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A.5 Corrective Action and Implementation Tracking Tool

This tool is used to document and track corrective actions needed to address challenges, delays, or barriers affecting mitigation project implementation. It supports adaptive management by ensuring that identified issues are addressed and resolved through coordinated follow-up actions.

Corrective actions may be identified through:

- Annual Review Questionnaires (Appendix A.2)
- Mitigation Action Progress Reports (Appendix A.3)
- Stakeholder meetings (September–October annual review cycle)
- Grant development or project implementation challenges
- Changes in funding, staffing, regulatory conditions, or project feasibility

This tool is maintained by FNSB Emergency Management and updated annually as part of the plan maintenance process.

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Corrective Action Tracking Table

Date Identified	Related Action ID	Issue / Barrier Identified	Impact on Implementation	Corrective Action / Next Steps	Responsible Agency	Target Completion	Status	Notes
MM/DD/YYYY	*(e.g., IL-3)*	*Describe issue (e.g., funding gap, permitting delay, staffing shortage)*	*☐ Minor Delay ☐ Significant Delay ☐ Preventing Implementation*	*Specific steps to resolve issue (e.g., apply for BRIC, coordinate with DOT&PF, revise project scope)*	*(Lead agency)*	*MM/YYYY*	*☐ Open ☐ In Progress ☐ Resolved*	*Additional details*
			☐ Minor Delay ☐ Significant Delay ☐ Preventing Implementation				☐ Open ☐ In Progress ☐ Resolved	
			☐ Minor Delay ☐ Significant Delay ☐ Preventing Implementation				☐ Open ☐ In Progress ☐ Resolved	
			☐ Minor Delay ☐ Significant Delay ☐ Preventing Implementation				☐ Open ☐ In Progress ☐ Resolved	
			☐ Minor Delay ☐ Significant Delay ☐ Preventing Implementation				☐ Open ☐ In Progress ☐ Resolved	
			☐ Minor Delay ☐ Significant Delay ☐ Preventing Implementation				☐ Open ☐ In Progress ☐ Resolved	
			☐ Minor Delay ☐ Significant Delay ☐ Preventing Implementation				☐ Open ☐ In Progress ☐ Resolved	
			☐ Minor Delay ☐ Significant Delay ☐ Preventing Implementation				☐ Open ☐ In Progress ☐ Resolved	
			☐ Minor Delay ☐ Significant Delay ☐ Preventing Implementation				☐ Open ☐ In Progress ☐ Resolved	
			☐ Minor Delay ☐ Significant Delay ☐ Preventing Implementation				☐ Open ☐ In Progress ☐ Resolved	
			☐ Minor Delay ☐ Significant Delay ☐ Preventing Implementation				☐ Open ☐ In Progress ☐ Resolved	
			☐ Minor Delay ☐ Significant Delay ☐ Preventing Implementation				☐ Open ☐ In Progress ☐ Resolved	

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Status Definitions

- Open: Issue identified, no action initiated
- In Progress: Corrective action underway
- Resolved: Issue addressed; project may proceed or resume

Guidance for Use

- Each corrective action should be linked to a MAP Action ID (Tables 11-1 through 11-7).
- Actions should be reviewed and updated during the annual September–October stakeholder review cycle.
- Persistent or unresolved issues should be evaluated for:
    - Project modification
    - Reprioritization
    - Removal or replacement in future plan updates
- Completed corrective actions should be reflected in:
    - Updated project status (Appendix A.3)
    - Plan revisions (Appendix A.4 Change Log)

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Appendix B. Public Outreach

This appendix documents the public outreach and stakeholder engagement conducted as part of the Fairbanks North Star Borough (FNSB) Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP) update. Public involvement is a critical component of the planning process and supports the identification of hazards and vulnerabilities, as well as the development of mitigation strategies that reflect community needs, priorities, and local conditions.

Outreach efforts were designed to provide multiple opportunities for participation and included stakeholder meetings, executive-level coordination meetings with participating jurisdictions, public meetings, open house events, coordination with advisory committees and governing bodies, and a formal public comment period. Engagement methods also included social media outreach, local media coverage, and the distribution of informational materials, such as open house and public comment flyers. To further support participation, printed draft plan materials and comment forms were made available at accessible community locations, including libraries, clerk's offices, and other high-visibility public venues.

Outreach activities were conducted to reach a broad and diverse cross-section of the community, including rural residents, vulnerable populations, and areas with limited access to traditional planning processes. Efforts included geographically distributed outreach locations and the placement of physical materials across the Borough, as well as the use of both in-person and digital engagement methods to maximize accessibility and participation.

A total of 38 outreach activities were conducted between February and August 2026, including stakeholder meetings, executive coordination meetings, public meetings, open house events, advisory committee briefings, and governing body presentations through plan adoption. Attendance records, sign-in sheets, and engagement documentation are included in this appendix. Social media outreach and digital engagement metrics are also summarized to demonstrate the reach and effectiveness of public notification efforts.

Input received through these outreach efforts was used to inform updates to hazard identification, risk assessment findings, and mitigation actions included in this plan. Public and stakeholder feedback helped validate identified risks, highlight community concerns, and support the development and prioritization of mitigation strategies.

These outreach activities supported the planning process described in Section 2.2 by providing structured, iterative opportunities for input throughout plan development. Engagement was incorporated at key milestones, including hazard identification, risk assessment, mitigation strategy development, and plan review and adoption, ensuring

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that the final plan reflects stakeholder priorities, local knowledge, and community-validated risk information.

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B.1 Public Involvement

Activity	Date	Location	Purpose
FNSB Administration Kick-Off Meeting	1/26/2026	JHAC, Salcha Conference Room	Kick-off meeting with FNSB administration
Fairbanks and North Pole Kick-Off Meeting	1/29/2026	Emergency Operations (EO) Conference Room	Kick-off meeting with city administrations
FNSB Internal Group Kick-Off Meeting	1/30/2026	JHAC, Salcha Conference Room	Kick-off meeting for FNSB Department stakeholders
North Pole City Council	2/2/2026	CONP Chambers	Discussion for MJ-HMP Participation & Stakeholder Group Member
Fairbanks City Council	2/3/2026	COF Chambers	Discussion for Stakeholder Group Member
FNSB Press Release	2/6/2026	Press Release	Public outreach
Stakeholder Meeting	2/12/2026	Carlson Center	Stakeholder input
Stakeholder Meeting	2/25/2026	Carlson Center	Stakeholder input
Executive Group Meeting	2/26/2026	EO Conference Room	Administration input
Planning Commission	3/10/2026	FNSB Chambers	Plan update briefing
Stakeholder Meeting	3/18/2026	Carlson Center	Stakeholder input
Executive Group Meeting	3/26/2026	EO Conference Room	Administration input
Public Meeting	4/6/2026	Ken Kunkel Center	Public input
Public Meeting	4/7/2026	North Pole Library	Public input
Public Meeting	4/8/2026	Noel Wien Library	Public input
Public Meeting	4/9/2026	Ester Volunteer Fire Department	Public input
Fairbanks Local Emergency Planning Committee (FEPC)	4/22/2026	Emergency Operations Center	Stakeholder input
Stakeholder Meeting	4/22/2026	Emergency Operations Center	Stakeholder input
Executive Group Meeting	4/23/2026	EO Conference Room	Administration input
Executive Group Meeting	5/14/2026	EO Conference Room	Administration input

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Regional Emergency Services Advisory Committee (RESAC)	5/18/2026	FNSB Chambers	Plan update briefing and stakeholder input
Stakeholder Meeting	5/20/2026	Noel Wien Library	Stakeholder input
Executive Group Meeting	5/28/2026	EO Conference Room	Administration input
Open House	6/2/2026	North Pole Library	Public comment
Open House	6/3/2026	Noel Wien Library	Public comment
Open House	6/4/2026	Ester Volunteer Fire Department	Public comment
Stakeholder Meeting	6/8/2026	Carlson Center	Stakeholder input
Juneteenth Festival (FNSB Table)	6/20/26	Carlson Center Rear Field	Public comment
Executive Group Meeting	6/25/2026	EO Conference Room	Administration input
Stakeholder Meeting	6/28/2026	Zoom	Stakeholder input
FNSB Planning Commission	7/28/2026	FNSB Chambers	Plan update briefing, input, approval
CONP City Council	8/3/2026	CONP Chambers	Plan update briefing
COF City Council	8/4/2026	COF Chambers	Plan update briefing
COF City Council	8/10/2026	COF Chambers	Plan adoption
FNSB Assembly	8/13/2026	FNSB Chambers	Plan introduction
CONP City Council	8/17/2026	CONP Chambers	Plan adoption
FNSB Assembly	8/20/2026	FNSB Chambers	Plan update briefing
FNSB Assembly	8/27/2026	FNSB Chambers	Plan adoption

DRAFT

B.2 FNSB Official Press Release, Office of the Mayor, February 6, 2026



For Immediate Release

February 6, 2026

Fairbanks North Star Borough Launches Update of

FEMA-Approved Hazard Mitigation Plan

Fairbanks, Alaska—The Fairbanks North Star Borough, in partnership with the Cities of Fairbanks and North Pole, has officially begun the five-year update of its FEMA-approved Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP).

Required under the Federal Disaster Mitigation Act of 2000, the plan identifies the hazards most likely to affect Interior Alaska and outlines long-term strategies to reduce risks to people, property, infrastructure, and essential services. Maintaining an up-to-date hazard mitigation plan ensures continued eligibility for federal mitigation grants that support critical projects such as drainage improvements, wildfire mitigation, seismic retrofits, and other resilience-building investments across the Borough.

The updated MJ-HMP will evaluate risks from six existing natural hazards: cryosphere and permafrost-related hazards, earthquakes, flooding, ground failure, severe weather, and wildland fire. In addition, the update will assess seven emerging and evolving threats: active threats, cyber incidents, hazardous materials, liquid natural gas, long-term power outages, terrorism, and supply chain disruptions.

"This plan is about protecting and preparing our community for possible threats," said Mayor Grier Hopkins. "By proactively identifying risks and investing in mitigation strategies, we strengthen our resilience and ensure we remain eligible for the federal funding that helps make critical infrastructure and public safety projects possible."

The planning process brings together Borough departments, local governments, utilities, fire departments, health and social service organizations, subject matter

experts, and community stakeholders. Public involvement is a key component of FEMA's requirements and ensures the updated plan reflects local knowledge, recent experiences, and evolving community priorities.

"Hazard mitigation is one of the most effective tools we have to reduce long-term losses," said Emergency Operations director Luke Butcher. "This update allows us to look closely at both natural and human-caused threats, reassess or vulnerabilities, and develop practical strategies that protect lives and property."

Over the coming months, residents, businesses and partner organizations will be invited to participate through surveys, public meetings, and opportunities to review draft materials. Community input will play a vital role in shaping mitigation strategies and ensuring the updated MJ-HMP reflects what matters most to communities across the Borough.

For more information and to participate in the planning process visit fnsb.gov or follow FNSB's official communication channels for updates.



Firefighters host a public meeting at for the Himalaya and Aggie Creek fires, 2025.

B.3 Public Meeting Outreach

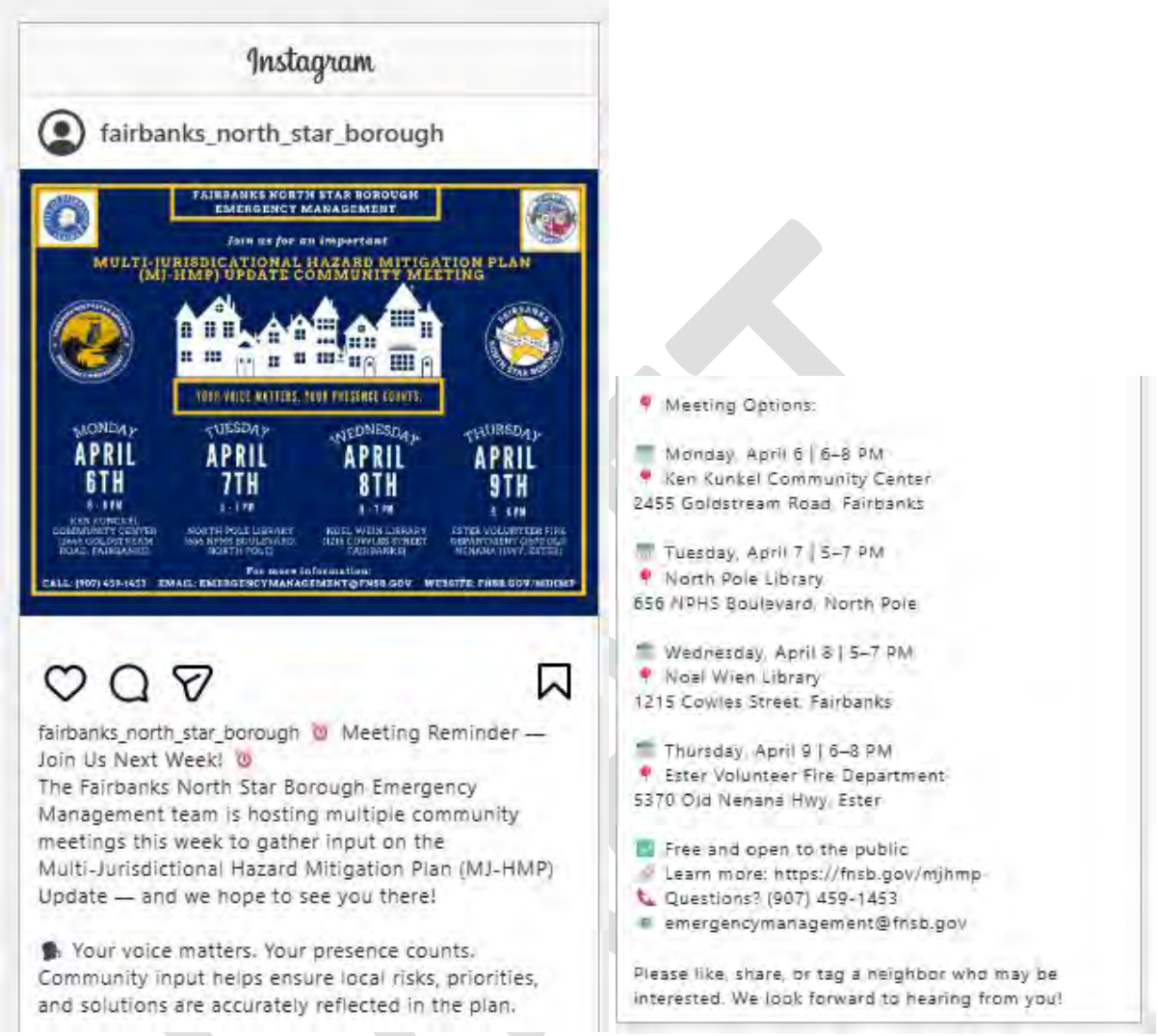
B.3.1 April Public Meetings Flyer: Facebook, March 20, 2026, 5:00 PM



B.3.2 April Public Meetings Flyer: Facebook, March 30, 2026, 5:00 PM



B.3.3 April Public Meetings Flyer: Instagram, March 31, 2026, 5:01 PM



B.3.4 Ken Kunckel Public Meetings Flyer: Facebook, April 5, 2026, 5:00 PM

Fairbanks North Star Borough
Published by Nancy Durham · April 5 ·

Community Meeting Invitation

The Fairbanks North Star Borough Emergency Management invites you to join us for an important Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP) Update

Community Meeting.
Your voice matters. Your presence counts.

This public meeting will focus on:
*Reviewing the hazards included in the MJ-HMP update
*Discussing proposed mitigation goals, objectives, and actions
*Gathering community input to confirm priorities, identify gaps, and ensure the plan reflects local experience and concerns

Monday, April 6
6:00 – 8:00 PM
Ken Kunkel Community Center (2455 Goldstream Road, Fairbanks)

Free and open to the public
Learn more: https://fnsb.gov/mjhmp
Questions? Call (907) 459-1453
Email: emergencymanagement@fnsb.gov

We hope to see you there — your input helps build a safer, more resilient Fairbanks North Star Borough See less



Boost

3 2

DRAFT

B.3.5 Ken Kunckel Public Meetings Flyer: Instagram, April 5, 2026, 5:00 PM





B.3.6 North Pole Library Public Meetings Flyer: Facebook, April 6, 2026, 5:00 PM



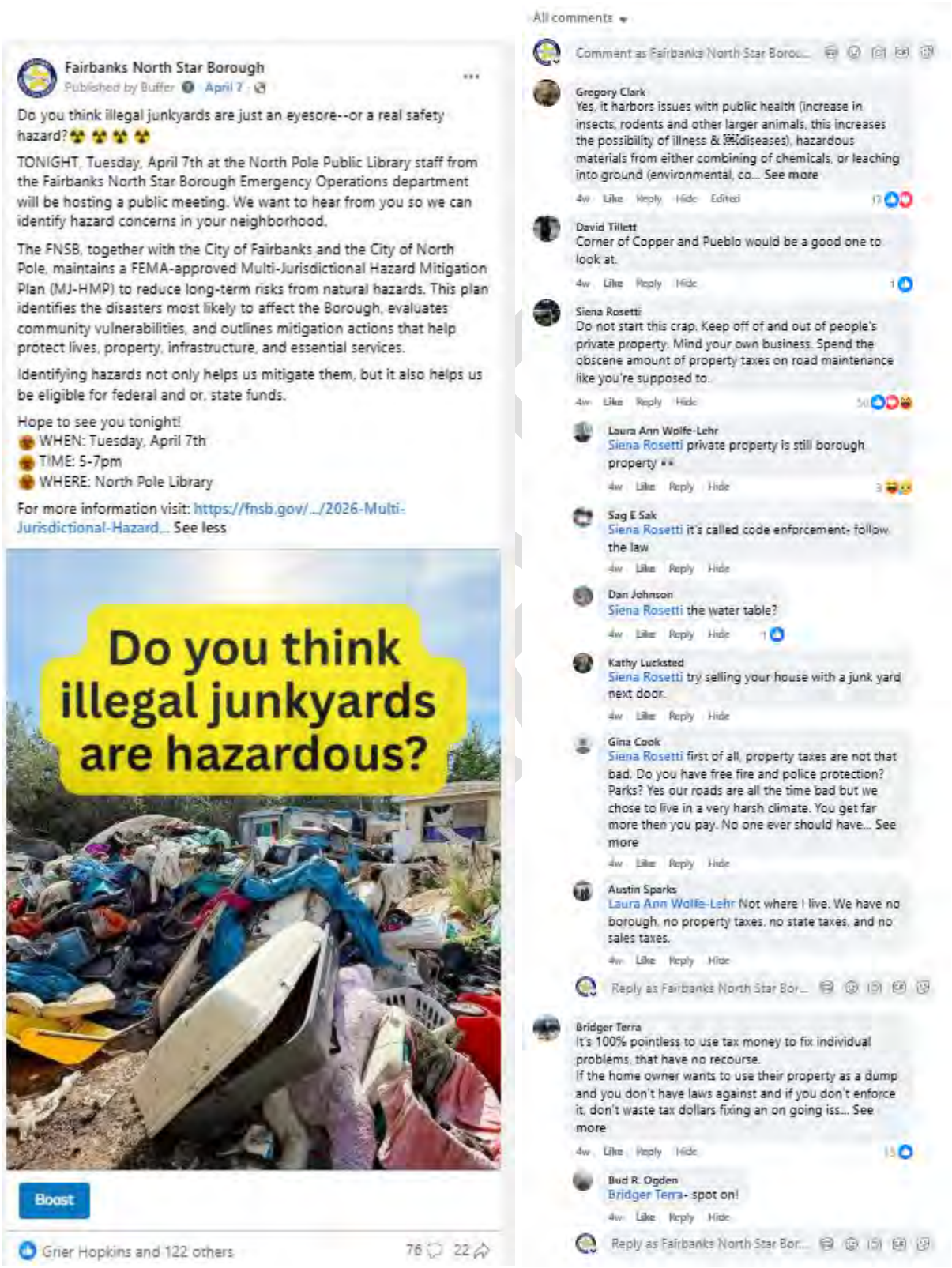


DRAFT

B.3.7 North Pole Library Public Meetings Flyer: Instagram, April 6, 2026, 5:00 PM



B.3.8 North Pole Library Public Meeting Reel: Facebook, April 7, 2026, 11:02 AM





Gene Sustarsic
Dangerous usually associated with other problems environmental issues.
4w Like Reply Hide 1

Nelle Andrews
Gene Sustarsic, do you know Jason Lee Hill, ha ha Corey Itchauqiyaq Rice (I NEED MY extreme pocket Bull Doggie ❤️ AND my pitbull girl 💗) and his brother, my friend, last name HILL 🤦 who's name I can't remember, who went thru our Construction Trades tra... See more
4w Like Reply Hide Edited

Reply as Fairbanks North Star Bor...

Sherry Christensen
There is one on Plato way ...they even buried cars, and so much more.
4w Like Reply Hide

Brian Ludlow
If the property is zone General Use -1 acre (GU-1), having a "Junk Yard" is a allowed use and the Borough should have no authority to impact that use.
4w Like Reply Hide 1

Ricardo Cortes
Yes they are.
4w Like Reply Hide 7

Cassie Ross
Spending our tax dollars on an individual persons issues is not going to "fix" them, most will return back to the way it was and if the property is general use and they want to do whatever they want with it. That is their right and you have no business... See more
4w Like Reply Hide 2

Deborah McIntosh-Turner
I believe that these folks fall under the line of " hoarders" it's a disease it's an addiction like any other addiction!! Cleaning it up is not the solution cause it will just pile up again. Wasted time and energy besides funds. ... See more
4w Like Reply Hide 1

Brenda Swader-Doggett
The cost of the clean up, to tax payers needs to be part of this conversation. They spent a lot if money cleaning up two sites last summer. One is starting to build their collection all over again.
4w Like Reply Hide

Sag E Sak
They are definitely hazardous! There has to be some regulation
4w Like Reply Hide 1

Tanja Kiesel
Yes absolutely
4w Like Reply Hide

Jamie Birklid-Bassett
YES! FIRE HAZZARDS!
4w Like Reply Hide

Patrick Matt
Coved in snow 6 months out of the year so what's the issue
4w Like Reply Hide

Cheri Lynn
YES!! 100%
4w Like Reply Hide

TravelingChef Jen
Yes!
4w Like Reply Hide

Rachel Moniak
Safety hazard
4w Like Reply Hide

Teri Drake
Yes
4w Like Reply Hide

Tamara Reid
The one on Lackloey is getting filled back up.
4w Like Reply Hide 3

Bud R. Ogden
Just more government overreach. Put a fence around it and post it. Problem solved.
4w Like Reply Hide 1

Thomas Barry Andrew
Why would anyone want to own a home on all the super fund sites.
4w Like Reply Hide

Syringa Lewis
Depends on what people are tossing in them. Eyesores yes.z
4w Like Reply Hide

Terry Ullmayer
We need to start burning garbage again...the technology is there
4w Like Reply Hide

Orieanna Cooper
Fire
4w Like Reply Hide

Maggie Boone Ross
Junkyards, automobile cemetaries, or garbage dumps? Or Hoarder houses? They are all eyesores, but vastly different hazards and remedies. One size does not fit all. This post is just to politicize hazard remediation costs and garner support for spending... See more
4w Like Reply Hide 3

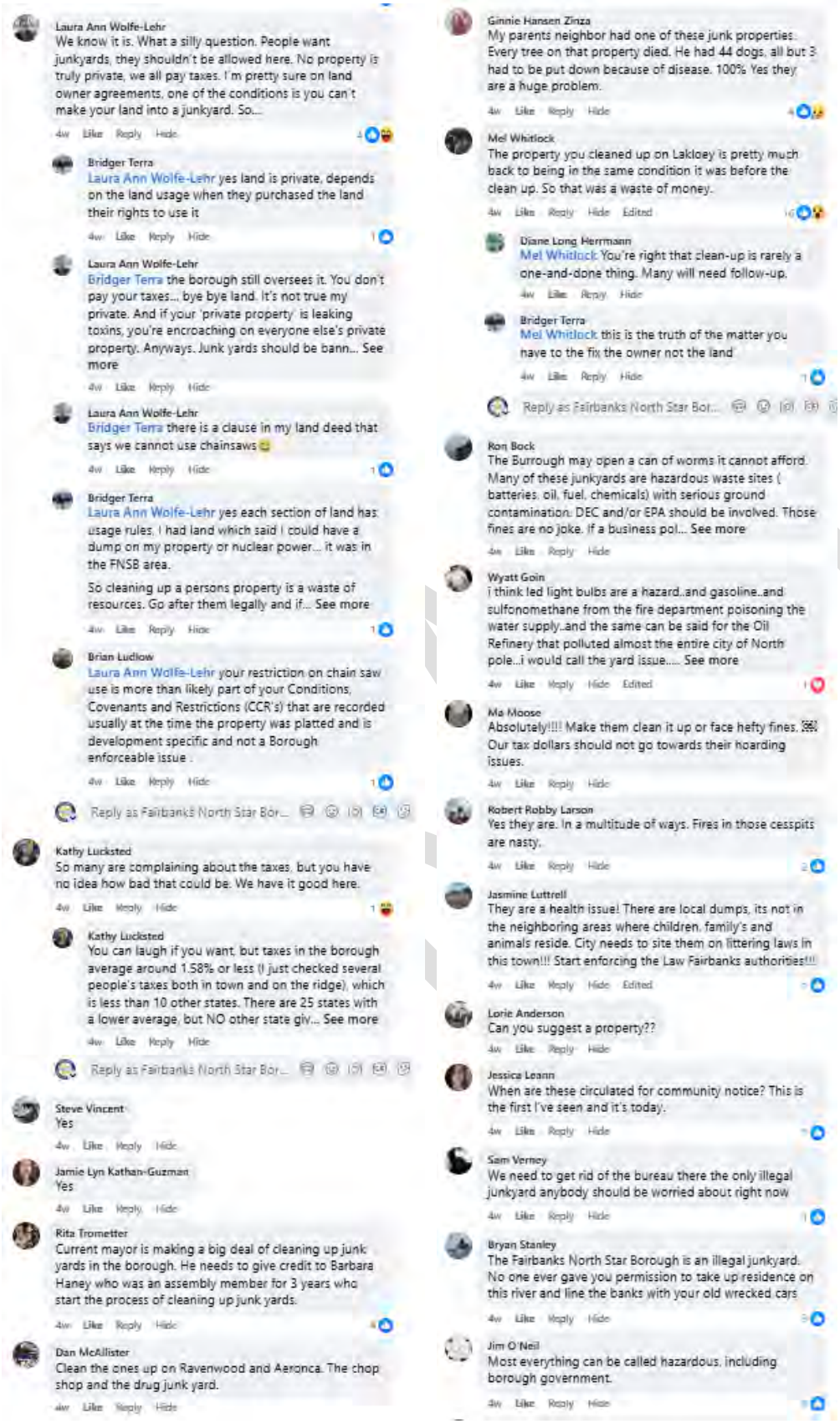
Philanthropist Frank
what documentation do any of you have, that any "junkyard" in the borough has effect someone's health that was not a property owner?
4w Like Reply Hide 2

SK8Z
Yes alot of them encroach on others property and the homeowner doesnt usually find out about it
4w Like Reply Hide Edited 2

Sophie Langenhahn
Nick Langenhahn we should go 🤦
4w Like Reply Hide 1

Jayne Eckman
Please post the results of this meeting. The purpose and what is proposed. For those of us that were unable to attend. Thank you
4w Like Reply Hide 1

Josh Himebauch
Wish you guys would do something with it and enforce codes and covnets. Paying what we pay in property taxes and then being told you don't enforce it and go get a lawyer is annoying 😐
4w Like Reply Hide 4



Laura Ann Wolfe-Lehr
We know it is. What a silly question. People want junkyards, they shouldn't be allowed here. No property is truly private, we all pay taxes. I'm pretty sure on land owner agreements, one of the conditions is you can't make your land into a junkyard. So...
4w Like Reply Hide

Bridger Terra
Laura Ann Wolfe-Lehr yes land is private, depends on the land usage when they purchased the land their rights to use it
4w Like Reply Hide

Laura Ann Wolfe-Lehr
Bridger Terra the borough still oversees it. You don't pay your taxes... bye bye land. It's not true my private. And if your 'private property' is leaking toxins, you're encroaching on everyone else's private property. Anyways. Junk yards should be bann... See more
4w Like Reply Hide

Laura Ann Wolfe-Lehr
Bridger Terra there is a clause in my land deed that says we cannot use chainsaws
4w Like Reply Hide

Bridger Terra
Laura Ann Wolfe-Lehr yes each section of land has usage rules. I had land which said I could have a dump on my property or nuclear power... it was in the FNSB area.
So cleaning up a persons property is a waste of resources. Go after them legally and if... See more
4w Like Reply Hide

Brian Ludlow
Laura Ann Wolfe-Lehr your restriction on chain saw use is more than likely part of your Conditions, Covenants and Restrictions (CCR's) that are recorded usually at the time the property was platted and is development specific and not a Borough enforceable issue .
4w Like Reply Hide

Reply as Fairbanks North Star Bor...

Kathy Lucksted
So many are complaining about the taxes, but you have no idea how bad that could be. We have it good here.
4w Like Reply Hide

Kathy Lucksted
You can laugh if you want, but taxes in the borough average around 1.58% or less (I just checked several people's taxes both in town and on the ridge), which is less than 10 other states. There are 25 states with a lower average, but NO other state giv... See more
4w Like Reply Hide

Reply as Fairbanks North Star Bor...

Steve Vincent
Yes
4w Like Reply Hide

Jamie Lyn Kathan-Guzman
Yes
4w Like Reply Hide

Rita Trometter
Current mayor is making a big deal of cleaning up junk yards in the borough. He needs to give credit to Barbara Haney who was an assembly member for 3 years who start the process of cleaning up junk yards.
4w Like Reply Hide

Dan McAllister
Clean the ones up on Ravenwood and Aeronca. The chop shop and the drug junk yard.
4w Like Reply Hide

Ginnie Hansen Zinza
My parents neighbor had one of these junk properties. Every tree on that property died. He had 44 dogs, all but 3 had to be put down because of disease. 100% Yes they are a huge problem.
4w Like Reply Hide

Mel Whitlock
The property you cleaned up on Lakloey is pretty much back to being in the same condition it was before the clean up. So that was a waste of money.
4w Like Reply Hide Edited

Diane Long Herrmann
Mel Whitlock You're right that clean-up is rarely a one-and-done thing. Many will need follow-up.
4w Like Reply Hide

Bridger Terra
Mel Whitlock this is the truth of the matter you have to the fix the owner not the land
4w Like Reply Hide

Reply as Fairbanks North Star Bor...

Ron Bock
The Burrough may open a can of worms it cannot afford. Many of these junkyards are hazardous waste sites (batteries, oil, fuel, chemicals) with serious ground contamination. DEC and/or EPA should be involved. Those fines are no joke. If a business pol... See more
4w Like Reply Hide

Wyatt Goin
i think led light bulbs are a hazard..and gasoline..and sulfonomethane from the fire department poisoning the water supply..and the same can be said for the Oil Refinery that polluted almost the entire city of North pole...i would call the yard issue..... See more
4w Like Reply Hide Edited

Ma Moose
Absolutely!!!! Make them clean it up or face hefty fines. Our tax dollars should not go towards their hoarding issues.
4w Like Reply Hide

Robert Robby Larson
Yes they are. In a multitude of ways. Fires in those cesspits are nasty.
4w Like Reply Hide

Jasmine Luttrell
They are a health issue! There are local dumps, its not in the neighboring areas where children, family's and animals reside. City needs to site them on littering laws in this town!!! Start enforcing the Law Fairbanks authorities!!!
4w Like Reply Hide Edited

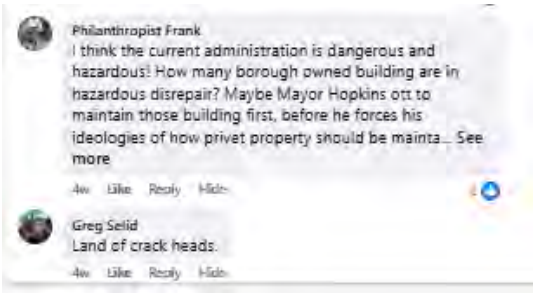
Lorie Anderson
Can you suggest a property??
4w Like Reply Hide

Jessica Leann
When are these circulated for community notice? This is the first I've seen and it's today.
4w Like Reply Hide

Sam Verney
We need to get rid of the bureau there the only illegal junkyard anybody should be worried about right now
4w Like Reply Hide

Bryan Stanley
The Fairbanks North Star Borough is an illegal junkyard. No one ever gave you permission to take up residence on this river and line the banks with your old wrecked cars
4w Like Reply Hide

Jim O'Neil
Most everything can be called hazardous, including borough government.
4w Like Reply Hide



B.3.9 North Pole Library Public Meeting Reel: Instagram, April 7, 2026, 11:02 AM



DRAFT

B.3.10 Noel Wien Library Public Meetings Flyer: Facebook, April 7, 2026, 5:00 PM



DRAFT

B.3.11 Noel Wien Library Public Meetings Flyer: Instagram, April 7, 2026, 5:00 PM



This public meeting will focus on:
*Reviewing the hazards included in the MJ-HMP update
*Discussing proposed mitigation goals, objectives, and actions
*Gathering community input to confirm priorities, identify gaps, and ensure the plan reflects local experience and concerns

Wednesday, April 8
5:00 – 7:00 PM
Noel Wein Library (1215 Cowles Street, Fairbanks)

Free and open to the public
Learn more: https://fnsb.gov/mjhmp
Questions? Call (907) 459-1453
Email: emergencymanagement@fnsb.gov

We hope to see you there — your input helps build a safer, more resilient Fairbanks North Star Borough

DRAFT

B.3.12 Ester Volunteer Fire Department Public Meetings Flyer: Facebook, April 8, 2026, 5:00 PM



B.3.13 Ester Volunteer Fire Department Public Meetings Flyer: Facebook, April 8, 2026, 5:00 PM



This public meeting will focus on:
*Reviewing the hazards included in the MJ-HMP update
*Discussing proposed mitigation goals, objectives, and actions
*Gathering community input to confirm priorities, identify gaps, and ensure the plan reflects local experience and concerns

Thursday, April 9
6:00 – 8:00 PM
Ester Volunteer Fire Department (3570 Old Nenana Hwy., Ester)

Free and open to the public
Learn more: https://fnsb.gov/mjhmp
Questions? Call (907) 459-1453
Email: emergencymanagement@fnsb.gov

We hope to see you there — your input helps build a safer, more resilient Fairbanks North Star Borough

DRAFT

B.4 Public Meeting Documentation

B.4.1 Ken Kunckel Community Center, April 6, 2026 (3 FNSB staff, 0 community members, 3 total)

PLEASE PRINT

MULTI-JURISDICTIONAL HAZARD MITIGATION UPDATE – COMMUNITY MEETING, KEN KUNCKEL COMMUNITY CENTER

PROJECT:	2026 MJ-HMP Update	**MEETING DATE:**	April 6, 2026
FACILITATOR:	Nancy Durham (Project Manager)	**LOCATION:**	2645 Goldstream Road, Fairbanks

PLEASE PRINT

NAME	NEIGHBORHOOD	STREET	HOUSEHOLD COUNT
Lucinta Frazier	North Pole		5
Nancy Durham	South Side		1
Colby K			

2026 MJ-HMP Update Ken Kunckel Community Center, Community Meeting 1

B.4.2 North Pole Library, April 7, 2026 (4 FNSB staff, 1 CONP staff, 5 community members, 10 total)

PLEASE PRINT

MULTI-JURISDICTIONAL HAZARD MITIGATION UPDATE – COMMUNITY MEETING, NORTH POLE LIBRARY

PROJECT: 2026 MJ-HMP Update **MEETING DATE:** April 7, 2026

FACILITATOR: Nancy Durham (Project Manager) **LOCATION:** 656 NPHS Boulevard, North Pole

PLEASE PRINT

NAME	NEIGHBORHOOD	STREET	HOUSEHOLD COUNT
Nancy Durham	Fairbanks (COF)		1
COLSY K	"		1
Juanita Frank	North Pole		5
Taylah G	North Pole		5
Kaitlin Wilson	North Pole		1
Tim G	North Pole		2
Linsey Losey	North Pole		2
Larry Tech	North Pole		6
Stephanie Thibodeau	North Pole		2
Shawn Hess	North Pole		4

B.4.3 Noel Wien Library, April 8, 2026 (3 FNSB staff, 5 community members, 8 total)

PLEASE PRINT

MULTI-JURISDICTIONAL HAZARD MITIGATION UPDATE – COMMUNITY MEETING, NOEL WEIN LIBRARY

PROJECT:	2026 MJ-HMP Update	**MEETING DATE:**	April 8, 2026
FACILITATOR:	Nancy Durham (Project Manager)	**LOCATION:**	1215 Cowles Street, Fairbanks

PLEASE PRINT

NAME	NEIGHBORHOOD	STREET	HOUSEHOLD COUNT
Juanita Frazier	North Pole		5
Nancy Durham	COF-South Side		1
Karla K. Secor	Ester / Henderson Rd.		3
Samara Mashal	Island Homes FBX	313 Slater Dr	1
PETERSHIER	SLATERVILLE	INA	2
Brian Charlton	Musk Ox	Wolverine	3
Logan Charlton	Muskox	" "	3
Colby K			

B.4.4 Ester Volunteer Fire Department, April 9, 2026 (4 FNSB staff, 2 EVFD staff, 3 community members, 9 total)

PLEASE PRINT

MULTI-JURISDICTIONAL HAZARD MITIGATION UPDATE – COMMUNITY MEETING, ESTER VOLUNTEER FIRE DEPARTMENT

PROJECT:	2026 MJ-HMP Update	**MEETING DATE:**	April 9, 2026
FACILITATOR:	Nancy Durham (Project Manager)	**LOCATION:**	3570 Old Nenana Hwy, Ester

PLEASE PRINT

NAME	NEIGHBORHOOD	STREET	HOUSEHOLD COUNT
Kim Streeter	CoF	Davis Rd	3
Nancy Durham	COF-South Side		1
Kellen Davidson	Ester		
Elizabeth Smith	Ester	Garner Rd	2
Hunter Goff	Farmers Loop	Joliet Dr.	3
Juanita Frazier	North Pole	Mustang	5
Krystel Marino	Old Wood – Ester	Garner	2
Colby K.	Old Nenana Hwy ↔	Glenaridge	1

B.5 Public Open House Outreach

B.5.1 June Public Open Houses Flyer: Facebook, May 1, 2026, 6:00 PM

Fairbanks North Star Borough
Published by Nancy Durham · May 1 at 6:00 PM ·

Save the Date: You're invited! MJ-HMP Community Open Houses – June

Fairbanks North Star Borough Emergency Management is hosting public open houses to review the entire draft Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP). This is your opportunity to learn about local hazards, review proposed mitigation actions, and provide feedback before the plan is finalized.

Open House Schedule:
June 2 | 5–7 PM – North Pole Library
June 3 | 5–7 PM – Noel Wien Library
June 4 | 6–8 PM – Ester Volunteer Fire Department

More info: FNSB.gov/MJHMP
Your voice matters. Your presence counts. See less



Boost

4 3

B.5.2 June Public Open Houses Flyer: Instagram, May 1, 2026, 6:001 PM



fairbanks_north_star_borough 🔥 Save the Date: You're invited! MJ-HMP Community Open Houses – June

Fairbanks North Star Borough Emergency Management is hosting public open houses to review the entire draft Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP). This is your opportunity to learn about local hazards, review proposed mitigation actions, and provide feedback before the plan is finalized.

🏛️ Open House Schedule:
June 2 | 5–7 PM – North Pole Library
June 3 | 5–7 PM – Noel Wien Library
June 4 | 6–8 PM – Ester Volunteer Fire Department

📎 More info: FNSB.gov/MJHMP
Your voice matters. Your presence counts.

B.5.3 June Public Open Houses Flyer and 30-Day Public Comment Period Flyer Postings, May 28, 2026

June Open House Flyer and 30-Day Public Comment Period Flyer Posting Locations
Alaska Coffee Roaster Company
Birch Hill Recreation Area
Chena Hot Springs Gas
DW Grill
Ester Community Park
Ester Gas
Ester Post Office
Ester Village Bulletin Board
Fairbanks City Hall
FNSB Juanita Helms Administration Center
Fox General Store
Goldstream General Store
Haystack Mailboxes Bulletin Board
JP Jones Community Center
Justa Store
Lulu's Bread & Bagels
McCafferty's Coffee House
Moose Mountain Mailboxes Bulletin Board
Noel Wien Library
North Pole City Hall
North Pole Library
Pleasant Valley Post Office
3 Bears North Pole/Ace Hardware

Some Display Pictures: Noel Wien Library FNSB JHAC North Pole Library







DRAFT

B.5.4 June Public Open Houses Flyer: Instagram, May 29, 2026, 6:00 PM



fairbanks_north_star_borough Come talk with us about how we prepare for hazards in our community.

The Fairbanks North Star Borough is hosting open houses for the Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP) update.

Open House Dates & Locations:
- Tuesday, June 2 | 5–7 PM - North Pole Library
- Wednesday, June 3 | 5–7 PM - Noel Wien Library (Fairbanks)
- Thursday, June 4 | 6–8 PM - Ester Volunteer Fire Department

Stop by anytime during the open house:
- Ask questions
- Review the plan
- Share your feedback

Visit the project webpage:
https://www.fnsb.gov/HMP (2026 Hazard Mitigation Plan Public Review Page)

Read the draft plan (2026 FNSB MJ-HMP Update Draft 2_05272026 (ND)(PDF)):
https://www.fnsb.gov/1291/2026-Multi-Jurisdictional-Hazard-Mitigat#docaccess-fe8b7c71f6c46aa93c3434a26b40c593

Submit comments online:
https://arcg.is/1SJQHC3

Public comment period is open through June 28

Your feedback helps shape real projects that impact our community.
#FNSB #HazardMitigation #EmergencyManagement #CommunityResilience #Fairbanks #NorthPole

DRAFT

B.5.5 June Public Open Houses Flyer: Facebook, May 29, 2026, 6:00 PM



B.5.6 Fairbanks Daily Newsminer Article for Open Houses, June 1, 2026

FAIRBANKS
Daily News-Miner
a company of The Helen Snedden Foundation, a nonprofit corporation

[Open house events seek input on borough's hazard mitigation plan | Local News | newsminer.com]

Open house events seek input on borough's hazard mitigation plan

Staff report

7 hrs ago (Article pulled on 6/1/26 at 2:10 PM)



News-Miner file photo

The Fairbanks North Star Borough will host open houses to hear input and provide information on its update to the Multi-Jurisdictional Hazard Mitigation Plan this week.

The open houses are slated for 5-7 p.m. Tuesday at North Pole Library, 656 NPHS Blvd.; 5-7 p.m. Wednesday at Noel Wien Library, 1215 Cowles St.; and 6-8 p.m. Thursday at the Ester Volunteer Fire Department, 3570 Old Nenana Highway.

Updated every five years as required by federal law, the plan is developed by local government departments, fire departments, utilities, health and social service organizations, experts on wildfire, climate and hydrology and members of the public.

The Hazard Mitigation Plan is a guiding document and set of tools for the borough, the City of Fairbanks and City of North Pole to reduce long-term natural hazard risks.

According to the borough, the plan identifies the most likely disasters that could impact the borough, evaluates community vulnerabilities, outlines mitigation actions that help protect lives, property, infrastructure, and essential service.

The 2026 update includes several additional situations "to expand the plan's risk awareness and support broader preparedness and mitigation planning efforts." Those hazards include cybersecurity, hazardous materials, liquified natural gas, long-term power outages, supply chain disruptions and terrorism.

It's also used as a resource for federal mitigation grants for projects such as drainage improvements, wildfire mitigation, seismic retrofits and flood protection.

The current draft is open for public comment through June 28. The plan can be found online at www.fnsb.gov/HMP.

DRAFT

B.5.7 June Public Open Houses North Pole Library Flyer: Instagram, June 1, 2026, 4:00 PM

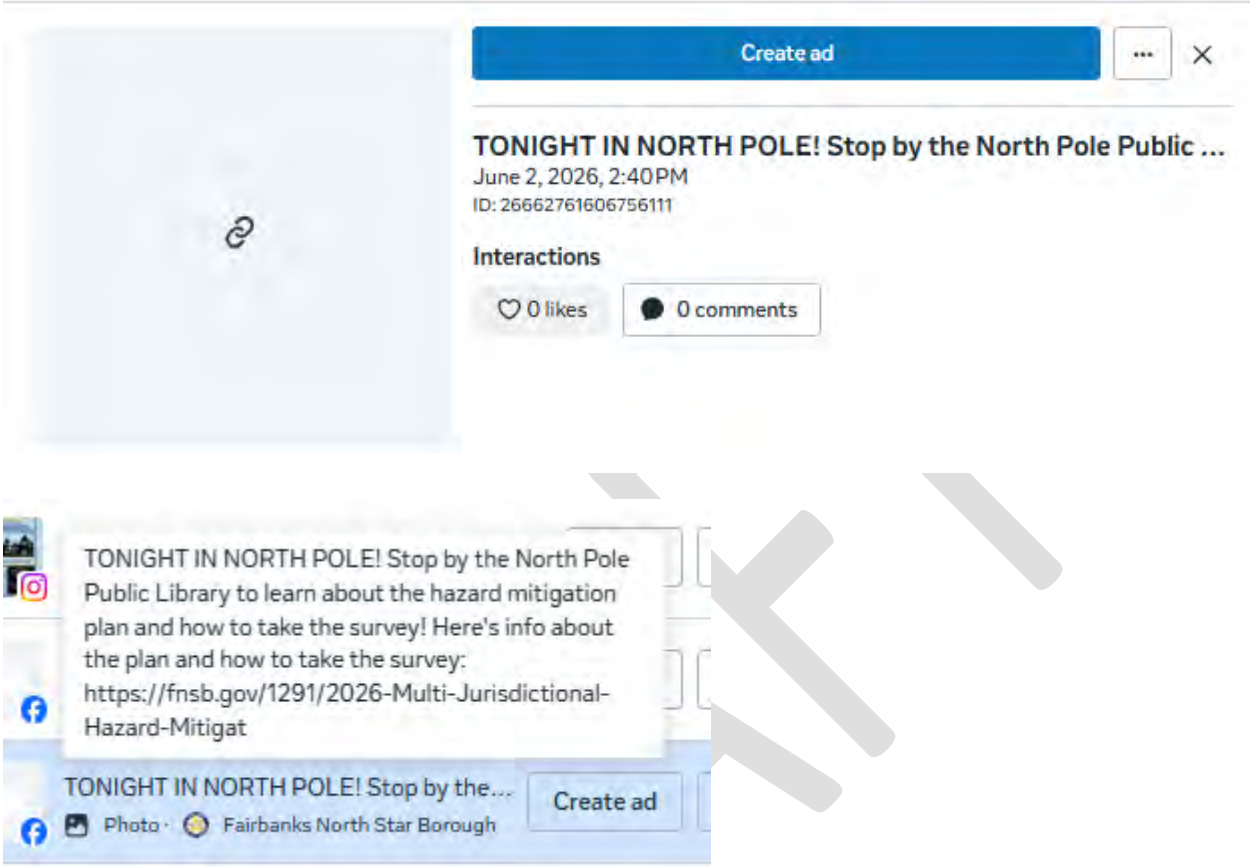


B.5.8 June Public Open Houses North Pole Library Flyer: Facebook, June 1, 2026, 8:00 PM

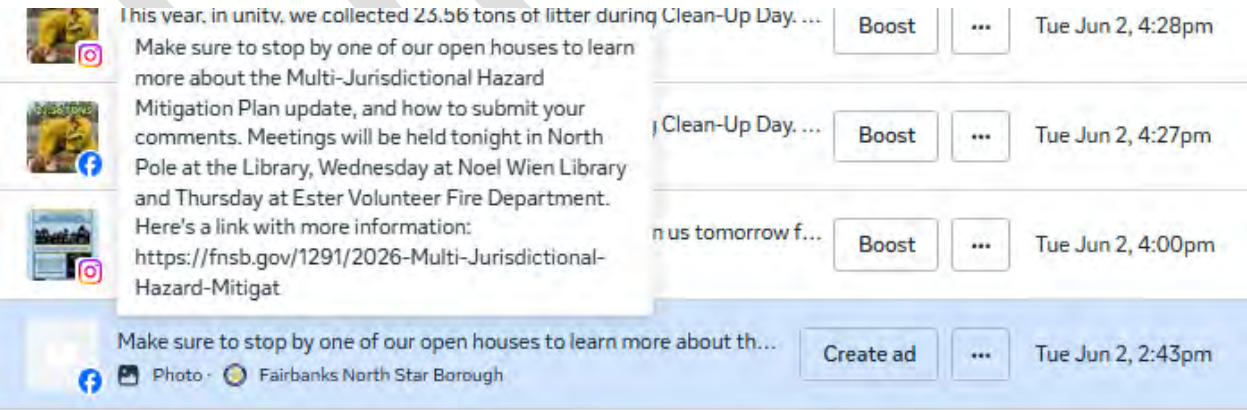


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B.5.9 June Public Open Houses North Pole Library Reminder, June 2, 2026, 2:40 PM



B.5.10 June Public Open Houses Reminder, June 2, 2026, 2:43 PM



DRAFT

B.5.11 June Public Open Houses Noel Wein Library Flyer: Instagram, June 2, 2026, 4:00 PM

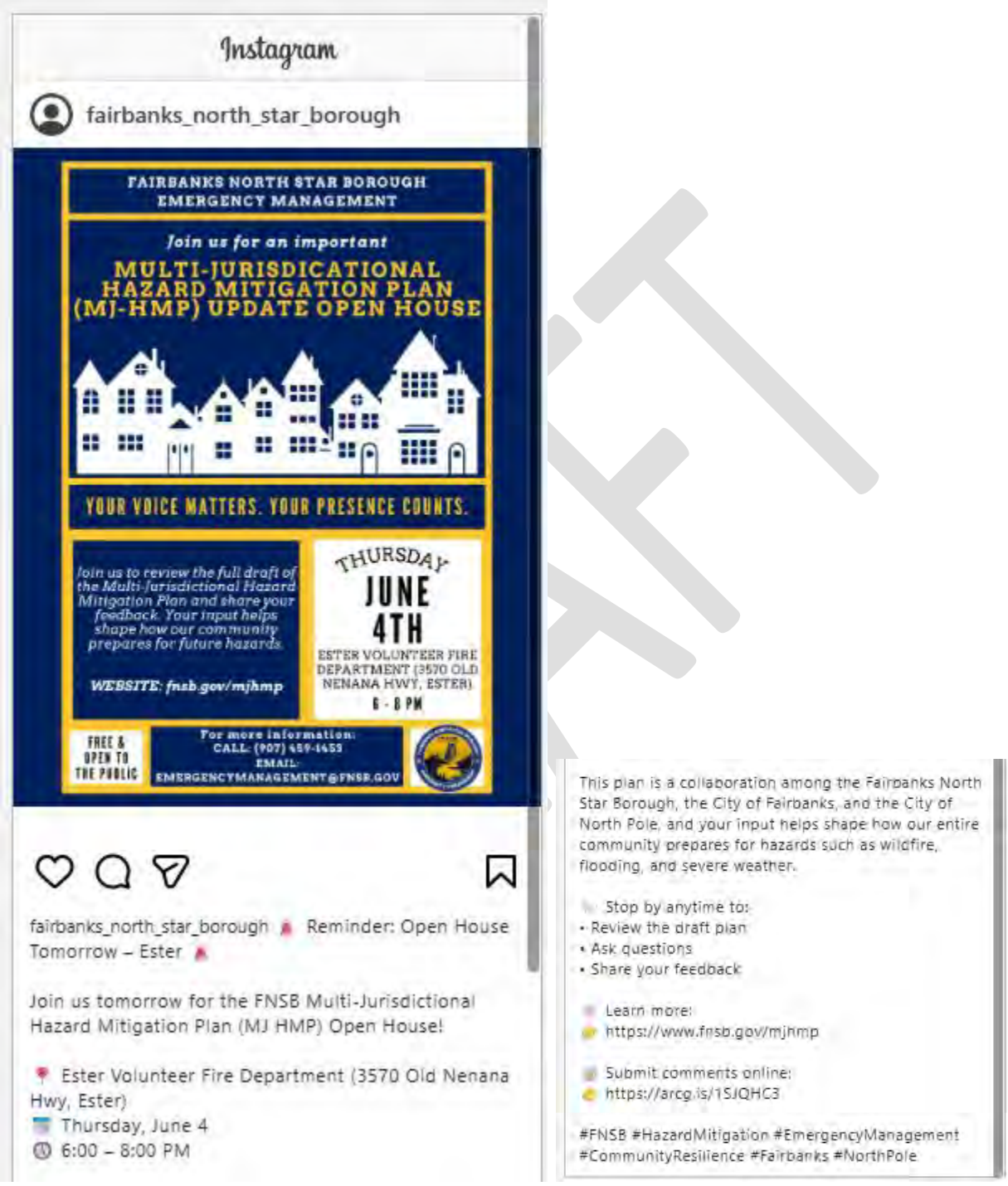


B.5.12 June Public Open Houses Noel Wein Library Flyer: Facebook, June 2, 2026, 8:00 PM



DRAFT

B.5.13 June Public Open Houses Ester Volunteer Fire Department Flyer: Instagram, June 3, 2026, 4:00 PM



DRAFT

B.5.14 June Public Open Houses Ester Volunteer Fire Department Flyer: Facebook, June 3, 2026, 8:00 PM



DRAFT

B.6 Public Open House Documentation

B.6.1 North Pole Library, June 2, 2026 (3 FNSB staff, 2 community members, 5 total)

PLEASE PRINT

MULTI-JURISDICTIONAL HAZARD MITIGATION UPDATE – COMMUNITY OPEN HOUSE, NORTH POLE LIBRARY

PROJECT:	2026 MJ-HMP Update	**MEETING DATE:**	June 2, 2026
FACILITATOR:	Nancy Durham (Project Manager)	**LOCATION:**	656 NPHS Boulevard, North Pole

PLEASE PRINT

NAME	NEIGHBORHOOD	STREET	HOUSEHOLD COUNT
Nancy Durham	South Side		1
Pepper McFarland	Chena Lakes		1
Samantha Kennett	Bradway	Bradway	3
Kim Streeter	Davis		3
Juanita Frazier			

2026 MJ-HMP Update North Pole Library, Community Open House 1

B.6.2 Noel Wien Library, June 3, 2026 (4 FNSB staff, 2 COF staff, 4 ARC staff / 8 community members, 18 total)

PLEASE PRINT

MULTI-JURISDICTIONAL HAZARD MITIGATION UPDATE – COMMUNITY OPEN HOUSE, NOEL WEIN LIBRARY

PROJECT: 2026 MJ-HMP Update **MEETING DATE:** June 3, 2026

FACILITATOR: Nancy Durham (Project Manager) **LOCATION:** 1215 Cowles Street, Fairbanks

PLEASE PRINT

NAME	NEIGHBORHOOD	STREET	HOUSEHOLD COUNT
Nancy Durham	SouthSide		1
Paula Scaglione	Lazelle Estates		1
KimStreeter	Davis		3
Terry Tirrell	Chena Pump		2
Jaeh Burnwell	Aurora	Manka	1
Andrew Lockard	City of Fairbanks		1
Mike Sanders	City of Fairbanks		2
Jo Miller	Red Cross		
Amy Gallaway	Chena Ridge		2
Chad Hutchison	City of FBX		1
Kitty Craft	Chena Pump		1
Rebekah Matz	fairbanks	Kodiak	5
Tafflall	North Pole		4/8
Parthyn I.	Fairbanks		2
Kira Church	FBX		5
Charelle Fullinck	College Road		2

2026 MJ-HMP Update Noel Wein Library, Community Open House 1

PLEASE PRINT

NAME	NEIGHBORHOOD	STREET	HOUSEHOLD COUNT
David matz	Taku/westgate	Kodiak	5
Juanita Frazier	North Pole	Mustang	5

B.6.3 Ester Volunteer Fire Department (4 FNSB staff, 1 DFFD staff, 3 EVFD staff, 6 community members, 14 total)

PLEASE PRINT

MULTI-JURISDICTIONAL HAZARD MITIGATION UPDATE – COMMUNITY OPEN HOUSE, ESTER VOLUNTEER FIRE DEPARTMENT

PROJECT: 2026 MJ-HMP Update **MEETING DATE:** June 4, 2026

FACILITATOR: Nancy Durham (Project Manager) **LOCATION:** 3570 Old Nenana Hwy, Ester

PLEASE PRINT

NAME	NEIGHBORHOOD	STREET	HOUSEHOLD COUNT
Nancy Durham	SouthSide		1
Kim Streeter	Davis		3
Juanita Frazier	North Pole	Mustang	4
Josiah Volkmann	Ester-Alder creek subdiv.	Clifford	1
Emery Johnson	North Pole	Hurst/Onyx	2
[illegible] Conner	Chena Ridge	Old Nenana Hwy	1
David Rockney	City of FNSB	17th Ave	2
Landon Cameron	Fort Wainwright		1
Eleanor Greenbaum	Fairbanks/College		1
Ritchie Musick	Cripple Creek	Aspenwood	2
MIKE MUSHCK	"	"	2
Mindy Gallagher	Ester	Azurite Dr.	2
Charles Gallagher	"	"	2
Kaitlin Wilson	mayores	[illegible]	1

2026 MJ-HMP Update Ester Volunteer Fire Department, Community Open House 1

B.7 30-Day Public Comment Period Social Media Posts

B.7.1 30-Day Public Comment Flyer: Facebook, May 29, 2026, 10:00 AM



DRAFT

B.7.2 30-Day Public Comment Flyer: Instagram, May 29, 2026, 10:00 AM



fairbanks_north_star_borough 🚨 Public Comment Period Now OPEN – Help Shape Our Hazard Mitigation Plan 🚨

The FNSB has released the 2026 Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP), in conjunction with the City of Fairbanks and North Pole (Draft 2), and invites the public to review and provide feedback.

This plan guides our community's preparation for risks such as wildfires, severe weather, flooding, and infrastructure disruptions.

📄 Read the draft plan (2026 FNSB MJ-HMP Update Draft 2_05/27/2026 (ND)(PDF)): https://www.fnsb.gov/1291/2026-Multi-Jurisdictional-Hazard-Mitigat#docaccess-fe8b7c71f6c46aa93c3434a26b40c593

🌐 Visit the project webpage: https://www.fnsb.gov/HMP

📝 Submit your comments: https://arcg.is/1SJQHC3

🗓️ Public Comment Period: Now open through June 28, 2026

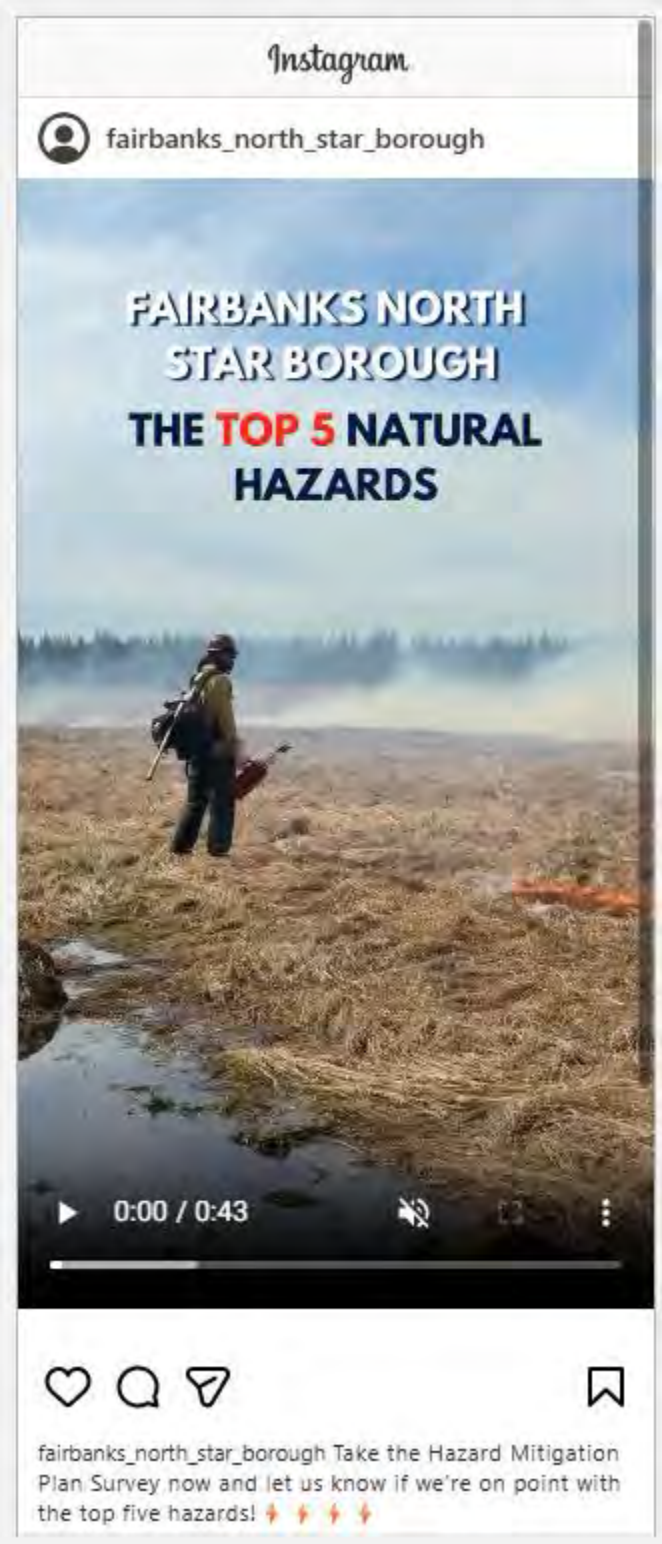
Your input helps ensure the plan reflects real-world risks, community priorities, and local expertise.

✅ Take a few minutes to review and share your feedback.

#FNSB #HazardMitigation #EmergencyManagement #CommunityResilience #Alaska

DRAFT

B.7.3 30-Day Public Comment Reel, Instagram, June 2, 2026, 2:36 PM



DRAFT

B.7.4 30-Day Public Comment Reel, Facebook, June 2, 2026, 2:37 PM



DRAFT

B.7.3 KTUU/KTVF Interview, Interior Alaska Prepares for Wildfire Season (includes 30-Day Public Comment Period), June 2, 2026,

Interior Alaska prepares for wildfire season

Interior Alaska prepares for wildfire season





Officials at the Fairbanks North Star Borough are getting ready to coordinate safety measures in the community as wildfire season approaches.

By Alex Bengel

Published: Jun. 2, 2026 at 4:49 PM AKDT| Updated: 22 hours ago

FAIRBANKS, Alaska (KTUU/KTVF) - As wildfire season approaches in Interior Alaska, officials at the Fairbanks North Star Borough (FNSB) are getting ready to coordinate safety measures in the community.

According to Luke Butcher, Director of Emergency Operations with the borough, preparing for wildfires includes keeping an eye on weather conditions that may pose a risk.

"We're looking for warm days in the 70s or higher," he said. "We're looking for a wind that's 5 to 15 miles an hour and we're really paying attention to the minimum relative humidities, so when you start seeing relative humidities in the teens is when you have the real big potential for fire to take hold."

Butcher said wildfire season typically begins between June 13 and 20, when lightning-based fires begin to flare up.

"We get an awful lot of small fires that are caused by human interactions with the woods around here, but the lightning-based fires often are more removed from the roadway and then have more time to grow before we are able to either one, know about them or two, get to them," Butcher said.

So far this summer, a fire has already sprung up in Fairbanks at the South Cushman Shooting Range in Fairbanks, according to FNSB Mayor Grier Hopkins, who added that it has already been put out.

"Last summer was our biggest local wildfire situation ever in terms of evacuation responses. Not the most burn, but in terms of impacts on communities. We had our first... structure burned down from a wildfire, in as long as anybody can remember," Hopkins said, concluding that the borough's performance last year gives him confidence in their ability to handle this year's wildfire season.

Once a wildfire begins, the borough is responsible for alerting the public and working with fire managers at the scene to determine whether an evacuation is necessary.

"A determining factor is definitely how long it takes for a person to evacuate a neighborhood. Some of the longer single-road in and out neighborhoods are ones that we'll be more proactive about changing their status sooner, and we really rely on feedback from the boots on the ground out there as to what the fire is doing," Butcher said, explaining that the vegetation in the area can also impact the decision-making.

When wildfire season begins to taper off in mid-August, planning for the next summer begins.

DRAFT

The borough is currently working on its Multi-Jurisdictional Hazard Mitigation Plan, which Butcher said has identified wildfires as the borough's top natural hazard locally.

Public comment on the mitigation plan is currently open until June 28, and borough officials are scheduled to hold three public meetings about it this week, at North Pole Branch Library on Tuesday, Noel Wien Public Library on Wednesday and finally at the Ester Fire Station on Thursday.

"In the first portion of the plan we really describe all the different natural hazards. really talk about how we prioritize them but [chapters] 10 and 11 is, we're talking about mitigation strategies, the things we're going to do to make it safer for us as a community, and then, are they feasible? Could we actually accomplish these things?" Butcher said. "Those are the pieces that we're looking for from the community, and are we on the mark, or do you have some feedback to help us tighten that, tighten that target down?"

Meanwhile, the director advised that borough residents opt in to receiving emergency alerts, including evacuation orders, by texting FNSBAlert to 67283.

Hopkins said if you have already signed up for these alerts, you do not have to reapply this year.

See a spelling or grammar error? Report it to web@ktuu.com

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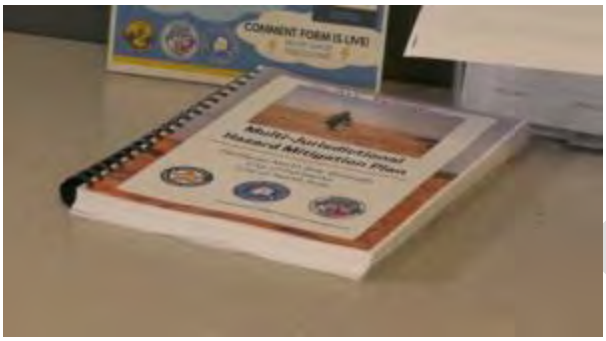
DRAFT

B.7.4 Daily Dispatch ran the KTUU/KTVF Interview, Interior Alaska Prepares for Wildfire Season (includes 30-Day Public Comment Period), June 3, 2026,

Interior Alaska prepares for wildfire season - Daily Dispatch

Interior Alaska prepares for wildfire season

- June 3, 2026



As wildfire season approaches in Interior Alaska, officials at the Fairbanks North Star Borough (FNSB) are getting ready to coordinate safety measures in the community.

According to Luke Butcher, Director of Emergency Operations with the borough, preparing for wildfires includes keeping an eye on weather conditions that may pose a risk.

"We're looking for warm days in the 70s or higher," he said. "We're looking for a wind that's 5 to 15 miles an hour and we're really paying attention to the minimum relative humidities, so when you start seeing relative humidities in the teens is when you have the real big potential for fire to take hold."

Butcher said wildfire season typically begins between June 13 and 20, when lightning-based fires begin to flare up.

"We get an awful lot of small fires that are caused by human interactions with the woods around here, but the lightning-based fires often are more removed from the roadway and then have more time to grow before we are able to either one, know about them or two, get to them," Butcher said.

KTUU-TV NBC/CBS 2 Anchorage

DRAFT

B.7.5 30-Day Public Comment Flyer: Instagram, June 4, 2026, 3:00 PM



fairbanks_north_star_borough One Week In – Have You Shared Your Input Yet?

We're one week into the 30-day public comment period for the 2026 Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP), and there's still time to make your voice heard.

This plan is a joint effort among the FNSB, the City of Fairbanks, and the City of North Pole to reduce the risk of hazards such as wildfire, flooding, and severe weather.

Your feedback helps shape future projects, priorities, and funding.

Read the draft plan (2026 MJ-HMP Update Draft 2_05272026 (ND)(PDF))):
https://www.fnsb.gov/DocumentCenter/View/27914/2026-MJ-HMP-Update-Draft-2_05272026-NDPDF

Submit your comments:
https://arcg.is/1SJQHC3

Comment period open through June 28

Takes just a few minutes
Open to all residents
Helps ensure the plan reflects real community needs

Have you taken a look yet? Now's the time.
#FNSB #HazardMitigation #EmergencyManagement #CommunityResilience #Fairbanks #NorthPoleAlaska

DRAFT

B.7.6 30-Day Public Comment Flyer: Facebook, June 4, 2026, 8:00 PM



B.7.7 30-Day Public Comment Flyer: FNSB Website Spotlight, June 8, 2026



B.7.7 30-Day Public Comment Flyer: Instagram, June 14, 2026, 4:00 PM



fairbanks_north_star_borough 🍂 Halfway Point Reminder

⏳ We're Halfway There – Have You Shared Your Input Yet?

The 30-day public comment period for the 2026 Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP) is at the halfway mark!

This plan is a collaborative effort between the Fairbanks North Star Borough, City of Fairbanks, and City of North Pole to reduce risk from hazards like wildfire, flooding, and severe weather.

📣 We want to hear from you.
Your feedback helps shape projects, priorities, and future funding decisions across our community.

📄 Read the draft plan (2026 MJ-HMP Update Draft 2_05272026(ND)(PDF)):
👉 https://www.fnsb.gov/DocumentCenter/View/27914/2026-MJ-HMP-Update-Draft-2_05272026-NDPDF

📬 Submit your comments:
👉 https://arcg.is/1SJQHC3

🗓️ Comment period closes June 28

✅ Quick and easy to provide input
✅ Open to all residents
✅ Helps ensure the plan reflects real community needs

Don't miss your chance—share your feedback before time runs out.
#FNSB #HazardMitigation #EmergencyManagement #CommunityResilience #Fairbanks #NorthPoleAlaska

DRAFT

B.7.8 30-Day Public Comment Flyer: Facebook, June 14, 2026, 8:00 PM



DRAFT

B.7.9 30-Day Public Comment Flyer: Instagram, June 22, 2026, 4:00 PM



DRAFT

B.7.10 30-Day Public Comment Flyer: Facebook, June 22, 2026, 8:00 PM



DRAFT

B.8 Social Media Promotion Statistics

Social Media Post: Community Meetings	Post Date	Views	Reach	Interactions	Link Clicks / Watch Time	Follows	Likes & Reactions	Comments	Shares	Saves
April Public Meetings Flyer: Facebook	3/20/26	2,874	N/A	21	2	0	10	0	11	0
April Public Meetings Flyer Reminder: Facebook	3/30/26	1,304	N/A	5	0	0	3	0	2	0
April Public Meetings Flyer Reminder: Instagram	3/31/26	248	159	7	N/A	0	3	0	3	1
Ken Kunckel Public Meeting Flyer: Facebook	4/5/26	2,307	N/A	5	0	0	3	0	2	0
Ken Kunckel Public Meeting Flyer: Instagram	4/5/26	272	156	2	N/A	0	2	0	0	0
North Pole Public Meeting Flyer: Facebook	4/6/26	12,767	N/A	7	0	0	3	1	3	0
North Pole Public Meeting Flyer: Instagram	4/6/26	212	126	1	N/A	0	1	0	0	0
North Pole Public Meeting Reel: Facebook	4/7/26	46,386	N/A	219	11	15	123	76	22	3
North Pole Public Meeting Reel: Instagram	4/7/26	436	279	14	N/A	0	9	0	4	0
Noel Wien Library Public Meeting Flyer: Facebook	4/7/26	964	N/A	2	0	0	1	0	1	0
Noel Wien Library Public Meeting Flyer: Instagram	4/7/26	187	120	2	N/A	0	2	0	0	0

DRAFT

Social Media Post: Community Meetings	Post Date	Views	Reach	Interactions	Link Clicks / Watch Time	Follows	Likes & Reactions	Comments	Shares	Saves
Ester Volunteer Fire Department Public Meeting Flyer: Facebook	4/8/26	1,548	N/A	7	0	0	3	0	4	0
Ester Volunteer Fire Department Public Meeting Flyer: Instagram	4/8/26	194	112	1	N/A	0	1	0	0	0
June Public Open Houses Flyer: Facebook	5/1/26	1,424	N/A	7	1	0	4	0	3	0
June Public Open Houses Flyer: Instagram	5/1/26	238	148	2	N/A	0	2	0	0	0
June Public Open Houses Flyer: Facebook	5/29/26	1,435	N/A	9	6	0	3	0	7	1
June Public Open Houses Flyer: Instagram	5/29/26	211	136	1	N/A	0	0	0	0	0
30-Day Public Comment Flyer: Facebook	5/29/26	1,538	N/A	7	5	0	3	0	4	0
30-Day Public Comment Flyer: Instagram	5/29/26	149	93	0	N/A	0	0	0	0	0
North Pole Public Meeting Flyer: Facebook	6/1/26	1,290	N/A	2	0	0	1	0	1	0
North Pole Public Meeting Flyer: Instagram	6/1/26	184	117	2	N/A	0	0	0	0	0
30-Day Comment Period Reel: Instagram	6/2/26	582	438	18	1h 12m	0	13	0	5	0

DRAFT

Social Media Post: Community Meetings	Post Date	Views	Reach	Interactions	Link Clicks / Watch Time	Follows	Likes & Reactions	Comments	Shares	Saves
30-Day Comment Period Reel: Facebook	6/2/26	2,376	17	2	N/A	0	12	1	2	2
North Pole Public Meeting Reminder: Facebook	6/2/26	459	N/A	0	N/A	0	0	0	0	0
June Open House Reminder: Facebook	6/2/26	2,200	N/A	3	2	0	3	0	1	0
Noel Wien Library Public Meeting Flyer: Facebook	6/2/26	1,861	N/A	7	1	0	4	0	3	0
Noel Wien Library Public Meeting Flyer: Instagram	6/2/26	151	87	2	N/A	0	2	0	0	0
Ester Volunteer Fire Department Public Meeting Flyer: Facebook	6/3/26	1,018	N/A	4	0	0	4	0	0	0
Ester Volunteer Fire Department Public Meeting Flyer: Instagram	6/3/26	119	79	2	N/A	0	2	0	0	0
30-Day Public Comment Flyer: Facebook	6/4/26	1,049	N/A	4	0	0	1	0	1	2
30-Day Public Comment Flyer: Instagram	6/4/26	171	103	1	N/A	0	1	0	0	0
30-Day Public Comment Flyer: Facebook	6/14/26	806	N/A	2	1	0	1	0	1	0
30-Day Public Comment Flyer: Instagram	6/14/26	103	60	0	N/A	0	0	0	0	0

DRAFT

Social Media Post: Community Meetings	Post Date	Views	Reach	Interactions	Link Clicks / Watch Time	Follows	Likes & Reactions	Comments	Shares	Saves
30-Day Public Comment Flyer: Facebook	6/22/26	849	N/A	7	0	0	3	0	4	0
30-Day Public Comment Flyer: Instagram	6/22/26	83	56	0	N/A	0	0	0	0	0
Totals		**87,995**	**2,286**	**375**	**29 / 1hr 12m**	**15**	**223**	**78**	**84**	**9**

Summary of Outreach and Engagement

The FNSB conducted a comprehensive and multi-layered outreach effort to support the 2026 MJ-HMP update. Engagement included coordination with participating jurisdictions (City of Fairbanks and City of North Pole), advisory bodies such as the Fairbanks Local Emergency Planning Committee (FEPC) and the Regional Emergency Services Advisory Committee (RESAC), and a wide range of community stakeholders.

Executive-level coordination meetings with local government leadership ensured alignment on planning priorities, mitigation strategies, and plan adoption across jurisdictions. These efforts strengthened the plan's multi-jurisdictional nature and reinforced regional collaboration throughout the planning process.

Public engagement opportunities included multiple public meetings and open house events held at accessible community locations across the Borough, as well as a formal 30-day public comment period. These opportunities allowed residents to review plan content, provide feedback, and contribute local knowledge regarding hazards and vulnerabilities.

Public outreach was further expanded through a Mayor's Office press release, local media coverage, and a sustained social media campaign across Facebook and Instagram platforms. In addition, printed outreach materials, including public meeting and 30-day public comment flyers, were posted at high-visibility community locations throughout the Borough (e.g., libraries, community centers, local businesses, and public facilities) to increase visibility and reach residents who may not engage through digital platforms.

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Collectively, these outreach and engagement activities ensured continuous stakeholder involvement, broad public awareness, and meaningful opportunities for input, resulting in a hazard mitigation plan that reflects regional priorities, incorporates local knowledge, and supports coordinated implementation across jurisdictions.

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Appendix C. Public Participation Surveys

Appendix C documents the public and stakeholder survey efforts conducted in support of the Fairbanks North Star Borough (FNSB) Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP) update. These surveys were implemented as part of a multi-phased public participation strategy designed to gather input at key stages of the planning process, including hazard identification, risk perception, vulnerability assessment, mitigation action development, and prioritization.

Surveys were conducted between February and April 2026 and included a series of three community surveys and two stakeholder surveys. Each survey was structured to build upon the previous phase of engagement. Community Survey #1 focused on hazard awareness, past impacts, and preparedness challenges; Community Survey #2 gathered input on mitigation priorities, preferred strategies, and implementation concerns; and Community Survey #3 validated hazard rankings. Stakeholder Survey #1 solicited input on capabilities, infrastructure needs, and implementation barriers, while Survey #2 further evaluated the feasibility of mitigation and partnership opportunities.

A total of 254 community responses and 10 stakeholder responses were received across all surveys. Survey distribution was supported through social media outreach, digital platforms, and direct stakeholder engagement, ensuring broad accessibility and participation across the borough. Survey questions were designed to capture input on hazard impacts, infrastructure vulnerabilities, mitigation preferences, and barriers to preparedness, including considerations of access and functional needs (AFN), rural and road-limited populations, and communication challenges.

Survey results were used throughout the plan to ensure that local knowledge and community priorities informed decision-making. Specifically:

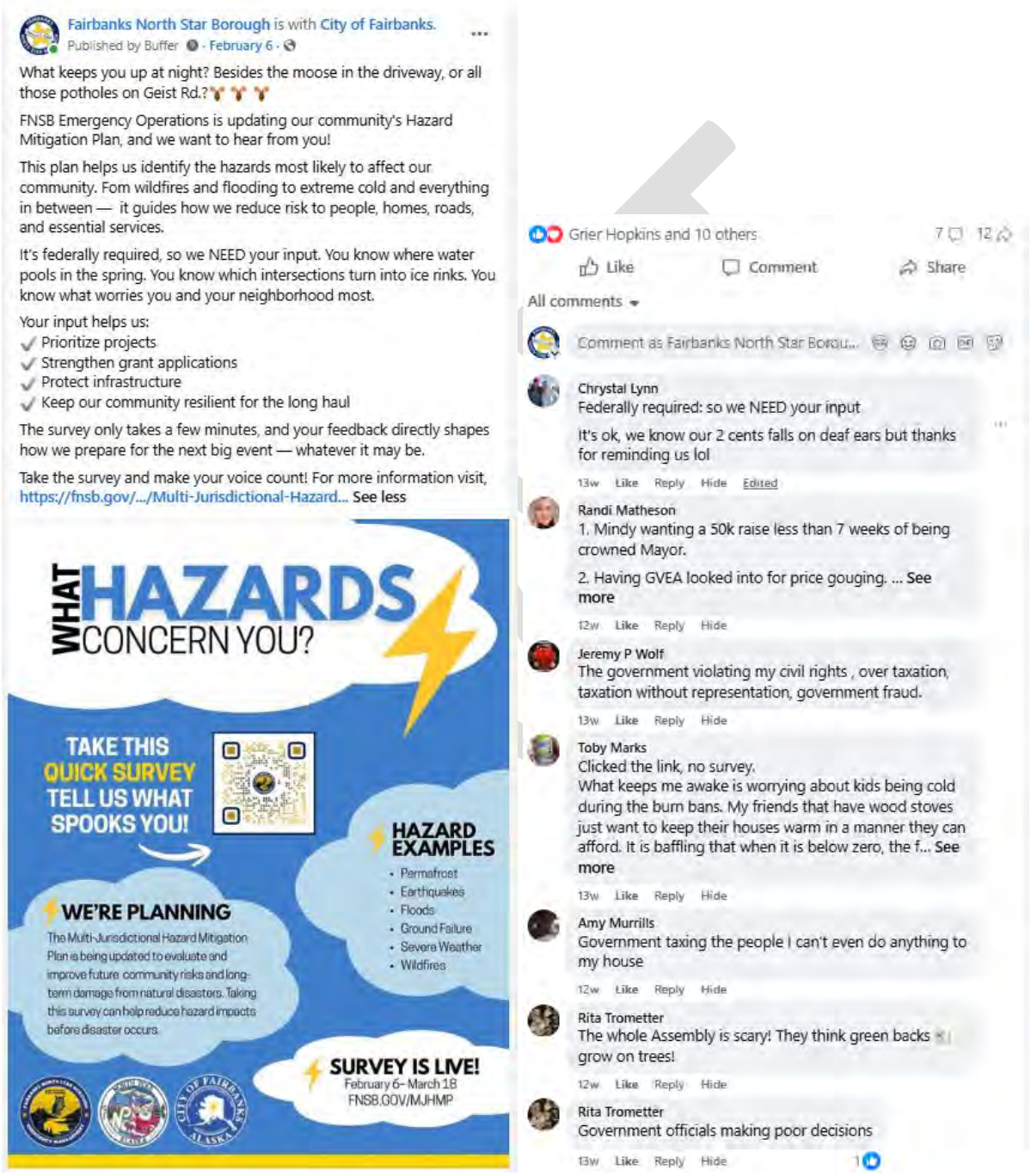
- Community input on hazard concerns and impacts supported the Hazard Identification and Risk Assessment (Chapter 4)
- Responses identifying vulnerabilities and service disruptions informed the Vulnerability Assessment (Chapter 4)
- Feedback on mitigation priorities, implementation barriers, and resource needs directly informed the Mitigation Strategy and Action Plan (Chapter 11)

Collectively, these surveys demonstrate a coordinated, data-informed approach to public participation, ensuring that the MJ-HMP reflects both technical analysis and the experiences, priorities, and needs of residents, stakeholders, and partner organizations across the FNSB.

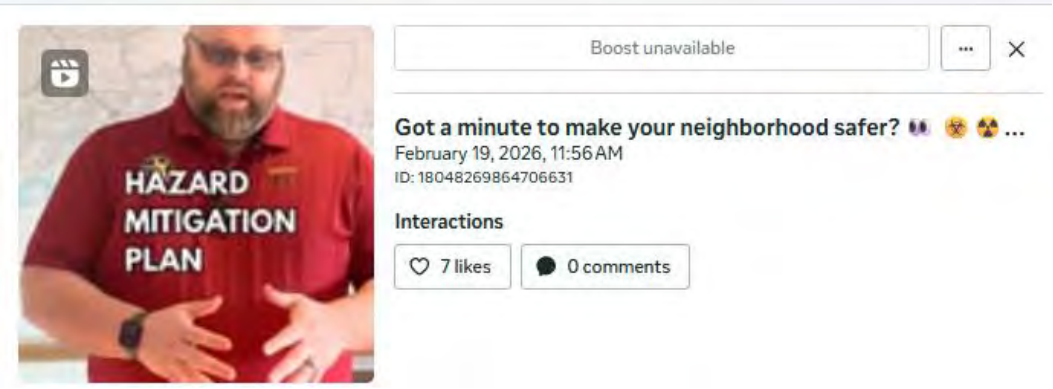
DRAFT

C.1. Social Media Postings

C.1.1 Community Survey #1: Facebook Survey Flyer, February 6, 2026, 11:20 AM



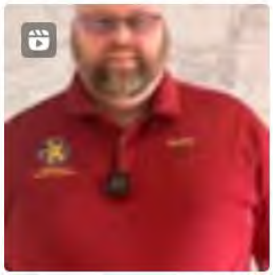
C.1.2 Community Survey #1: Instagram Reel, February 19, 2026, 11:56 AM





DRAFT

C.1.3 Community Survey #1: Facebook Reel, February 19, 2026, 11:56 AM



Boost unavailable

Got a minute to make your neighborhood safer? 👀 😵 ☢️ ...
February 19, 2026, 11:56 AM
ID: 1327630282731430

Interactions

65 reactions | 14 comments | 7 shares



Fairbanks North Star Borough is with **City of Fairbanks.**
Published by Instagram · February 19 ·
♫ The Next Episode (Instrumental) · Dr. Dre ·

Got a minute to make your neighborhood safer? 👀

☢️☢️🦺 Take the FNSB Multi-Jurisdictional Hazard Mitigation survey today and let us know what hazards are a threat to your area of the Borough. Go to FNSB.GOV to learn more.

The Hazard Mitigation Plan is required under the Federal Disaster Mitigation Act of 2000 and identifies the hazards most likely to affect Interior Alaska. The plan outlines long-term strategies to reduce risks to people, property, infrastructure and essential services. The Borough MUST maintain a hazard mitigation plan to ensure continued eligibility for federal mitigation grants that support critical projects. Public input is a required part of crafting the plan. **See less**



45 11 7

C.1.4 Community Survey #2: Instagram Flyer, March 19, 2026, 5:59 PM



fairbanks_north_star_borough What matters most to you?

The Fairbanks North Star Borough is updating the Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP)—and we need your input.

Take our quick community survey to tell us which mitigation actions should be prioritized to reduce future risk from natural hazards like flooding, wildfire, earthquakes, and severe weather.

✅ The survey is short
✅ Your input helps guide future planning and funding decisions
✅ Open to all residents across the Borough

🗓️ Survey open now through April 24
📲 Take the survey: https://arcg.is/1jWKW00
📱 Or scan the QR code on the flyer
For more information, visit FNSB.GOV/HMP

Your voice helps shape a safer, more resilient Fairbanks North Star Borough.

DRAFT

C.1.5 Community Survey #2: Facebook Flyer, March 19, 2026, 6:00 PM



C.1.6 Community Survey #3: Facebook Flyer, April 9, 2026, 6:00 PM



C.1.7 Community Survey #3: Instagram Flyer, April 9, 2026, 6:00 PM



DRAFT

C.1.8 Community Survey #2: Instagram Flyer, April 10, 2026, 1:00 PM



C.1.9 Community Survey #2: Facebook Flyer, April 10, 2026, 5:00 PM



C.1.10 Community Survey #2: Instagram Flyer, April 24, 2026, 1:30 PM



fairbanks_north_star_borough Today is the LAST day to take the Hazard Mitigation Survey!

Help shape how our community prepares for and reduces risks from natural disasters like flooding, earthquakes, severe weather, and more.

Your input helps prioritize:
- Flood protection
- Drainage improvements
- Education programs
- Earthquake retrofits
- Severe weather preparedness

Closes today – April 24
Take the survey now: https://arcg.is/1jWKW00

Your voice matters in strengthening our community's future.

DRAFT

C.1.11 Community Survey #2: Facebook Flyer, April 24, 2026, 3:13 PM



C.1.12 Community Survey #3: Instagram Flyer, April 25, 2026, 5:01 PM



fairbanks_north_star_borough ⏰ Time is running out to make your voice heard!
Help shape the Fairbanks North Star Borough's Multi-Jurisdictional Hazard Mitigation Plan by ranking the top five hazards facing our community, including floods, fires, seismic events, severe weather, and more.

This quick survey helps prioritize actions that reduce risk and protect our community.

🗓️ Survey closes April 30
👉 Take the survey now: https://arcg.is/bP8yq2
Your voice matters.

For more information, visit FNSB.GOV/HMP.

DRAFT

C.1.13 Community Survey #3: Facebook Flyer, April 26, 2026, 7:00 PM



Table C-1: Social Media Posts Statistics

Social Media Posts: Survey	Post Date	Views	Reach	Interactions	Link Clicks / Watch Time	Follows	Likes & Reactions	Comments	Shares	Saves
Community Survey #1: Facebook Flyer	2/6/26	5,990	N/A	32	22	1	11	7	12	3
Community Survey #1: Instagram Reel	2/19/26	387	302	8	40m 46S	0	7	0	0	0
Community Survey #1: Facebook Reel	2/19/26	4,668	N/A	64	17/ 10h 21m	1	45	11	7	1
Community Survey #2: Instagram Flyer	3/19/26	240	145	6	N/A	0	5	0	0	0
Community Survey #2: Facebook Flyer	3/19/26	2,978	N/A	19	8	1	7	0	11	1
Community Survey #3: Facebook Flyer	4/9/26	3,173	N/A	16	12	1	9	1	6	0
Community Survey #3: Instagram Flyer	4/9/26	187	110	3	N/A	0	3	0	0	0
Community Survey #2: Instagram Flyer	4/10/26	179	119	1	N/A	0	1	0	0	0
Community Survey #2: Facebook Flyer	4/10/26	1,679	N/A	3	3	0	2	0	1	0
Community Survey #2: Instagram Flyer	4/24/26	148	104	5	N/A	0	2	0	3	0
Community Survey #2: Facebook Flyer	4/24/26	881	N/A	3	1	0	2	0	1	0
Community Survey #3: Instagram Flyer	4/25/26	210	125	1	N/A	0	1	0	0	0
Community Survey #3: Facebook Flyer	4/26/26	1,423	N/A	4	2	1	2	0	2	0
Totals		**22,143**	**905**	**165**	**65 / 11h 1m 46s**	**5**	**97**	**19**	**43**	**5**

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C.2. Community Survey #1

C.2.1 Your Voice on Local Hazards Questions

FNSB MJ-HMP Community Survey 1

Your Voice on Local Hazards

Thank you for taking part in this community survey!

The Fairbanks North Star Borough (FNSB) is updating its Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP), which helps us understand local hazards and reduce the impacts of flooding, wildfire, earthquakes, severe weather, and other risks in our area. Your input is an important part of this update and helps ensure the plan reflects real community experiences and priorities.

This survey only takes a few minutes. Your feedback will guide future projects and help make our neighborhoods safer and more resilient.

Thank you for sharing your voice and helping shape the future of our community!

Rate your level of concern for each hazard. (Please select one per row.)					
	Not Concerned	Slightly	Moderately	Very	Extremely
Active Threat (Active Shooter / Workplace Violence)					
Cryosphere / Permafrost Thaw					
Cyber Attack					
Earthquakes					
Flooding					
Ground Failure (Landslide / Erosion)					
HAZMAT Incident					
Severe Weather					

DRAFT

Terrorism					

How have these hazards affected you, your household, or your neighborhood in the past five (5) years? (Please select all that apply.)	
	Access to medical care
	Air quality/smoke issues
	Disruption to work/school
	Economic or income loss
	Evacuation or sheltering
	Power outages
	Property damage
	Road closures
	Water/sewer disruptions
	Other (Please Describe)
Describe hazards you've personally experienced in FNSB.	
Identify vulnerable neighborhoods or areas in FNSB.	
Which challenges make it harder for your household to prepare for or respond to emergencies? (Please select all that apply.)	
	Access or functional needs (AFN)
	Distance from services
	Lack of information
	Language or communication barriers
	Limited financial resources

DRAFT

	Limited time
	Limited transportation
	Other (Please Describe)

Have you noticed any changes in hazard frequency or severity in your area?

(Examples: stronger winds, more flooding, thawing ground, severe winter events.)

❒ Yes ❒ No ❒ Unsure

If yes, please describe.

Are you aware of local shelters, alerts, or evacuation routes?

(Please select one per row.)

	Yes	No	Unsure
Alerts			
Evacuation Routes			
Local Shelters			

Which types of infrastructure in your area do you believe are most vulnerable to hazards?

(Please select all that apply.)

	Communication systems
	Emergency services access
	Homes and buildings
	Powerlines and utilities
	Roads and bridges
	Water and wastewater systems
	Other (Please Describe)

What are your preferred communication methods? (Please select all that apply.)	
	Borough Website
	Community Bulletin Boards
	Email
	Mailers
	Public Meetings (Start in March)
	Social Media (i.e., Facebook, Instagram)
	Text Message
	Other (Please Describe)

Thank you for taking this survey. Please drop it in a designated drop box, mail it to FNSB EM (MJ-HMP), PO Box 71267, Fairbanks, AK 99707, or email it to EmergencyManagement@fnsb.gov.

You may view the plan updates at FNSB MJ-HMP.

Sign up for Emergency Alerts by texting "FNSBALERT" to 67283.

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C.2.2 Your Voice on Local Hazards Questions (Revised)

FNSB MJ-HMP Community Survey 1

Your Voice on Local Hazards

Thank you for taking part in this community survey!

The Fairbanks North Star Borough (FNSB) is updating its **Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP)**, which helps us understand local hazards and reduce the impacts of flooding, wildfire, earthquakes, severe weather, and other risks in our area. Your input is an important part of this update and helps ensure the plan reflects real community experiences and priorities.

This survey only takes a few minutes. Your feedback will guide future projects and help make our neighborhoods safer and more resilient.

Thank you for sharing your voice and helping shape the future of our community!

Rate your level of concern for each hazard. (Please select one per row.)					
	Not Concerned	Slightly	Moderately	Very	Extremely
Active Threat (Active Shooter / Workplace Violence)					
Cryosphere / Permafrost Thaw					
Cyber Attack					
Earthquakes					
Flooding					
Ground Failure (Landslide / Erosion)					
HAZMAT Incident					
Severe Weather					
Terrorism					
Wildfires					

How have these hazards affected you, your household, or your neighborhood in the past five (5) years? (Please select all that apply.)	
	Access to medical care
	Air quality/smoke issues
	Disruption to work/school
	Economic or income loss

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	Evacuation or sheltering
	Power outages
	Property damage
	Road closures
	Water/sewer disruptions
	Other (Please Describe)

Describe hazards you've personally experienced in FNSB.

Identify vulnerable neighborhoods or areas in FNSB.

Which challenges make it harder for your household to prepare for or respond to emergencies?
(Please select all that apply.)

	Access or functional needs (AFN)
	Distance from services
	Lack of information
	Language or communication barriers
	Limited financial resources
	Limited time
	Limited transportation
	Other (Please Describe)

Have you noticed any changes in hazard frequency or severity in your area?
(Examples: stronger winds, more flooding, thawing ground, severe winter events.)

☐ Yes ☐ No ☐ Unsure

If yes, please describe.

Are you aware of local shelters, alerts, or evacuation routes?
(Please select one per row.)

	Yes	No	Unsure
Alerts			
Evacuation Routes			
Local Shelters			

Which types of infrastructure in your area do you believe are most vulnerable to hazards?
(Please select all that apply.)

	Communication systems
	Emergency services access
	Homes and buildings

	Powerlines and utilities
	Roads and bridges
	Water and wastewater systems
What are your preferred communication methods? (Please select all that apply.)	
	Borough Website
	Community Bulletin Boards
	Email
	Mailers
	Newspaper
	Public Meetings (Start in March)
	Public Television
	Radio
	Social Media (i.e., Facebook, Instagram)
	Text Message

Thank you for taking this survey. Please drop it in a designated drop box, mail it to FNSB EM (MJ-HMP), PO Box 71267, Fairbanks, AK 99707, or email it to EmergencyManagement@fnsb.gov.

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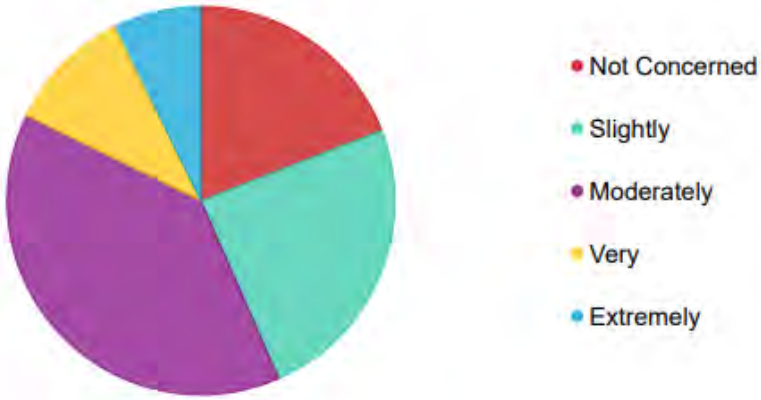
C.2.3 Your Voice on Local Hazards Results

153 community member responses (This survey changed in the middle to add wildfire. You will see wildfire mentioned in the responses prior to that change.)

MJ-HMP_CS1

Rate your level of concern for each hazard.

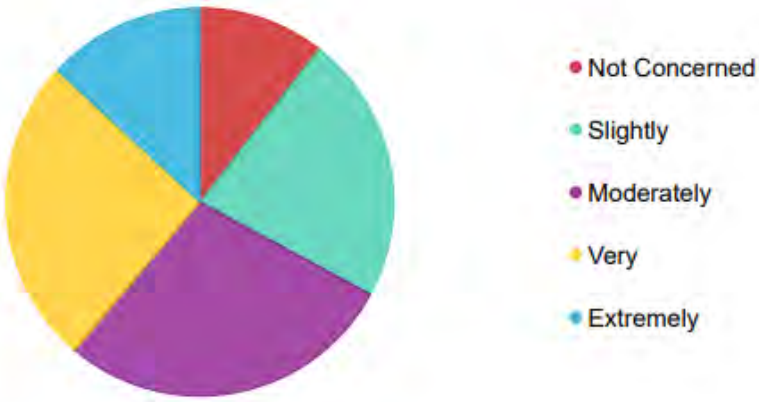
Active Threat (Active Shooter / Workplace Violence) *



Answers	Count	Percentage
Not Concerned	29	19.08%
Slightly	37	24.34%
Moderately	59	38.82%
Very	16	10.53%
Extremely	11	7.24%

Answered: 152 Skipped: 0

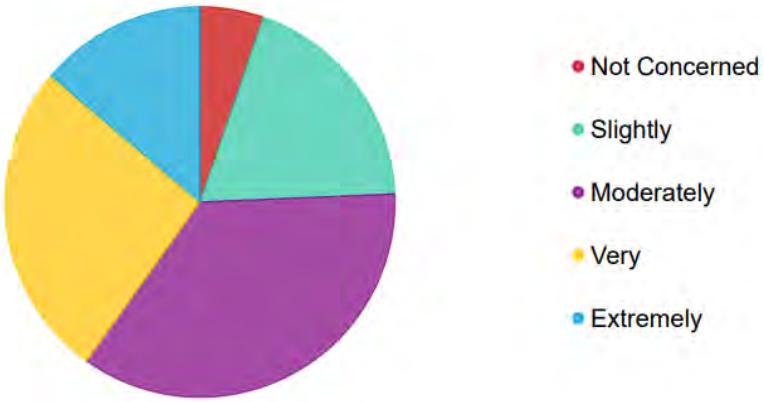
Cryosphere / Permafrost Thaw *



Answers	Count	Percentage
Not Concerned	16	10.53%
Slightly	34	22.37%
Moderately	43	28.29%
Very	39	25.66%
Extremely	20	13.16%

Answered: 152 Skipped: 0

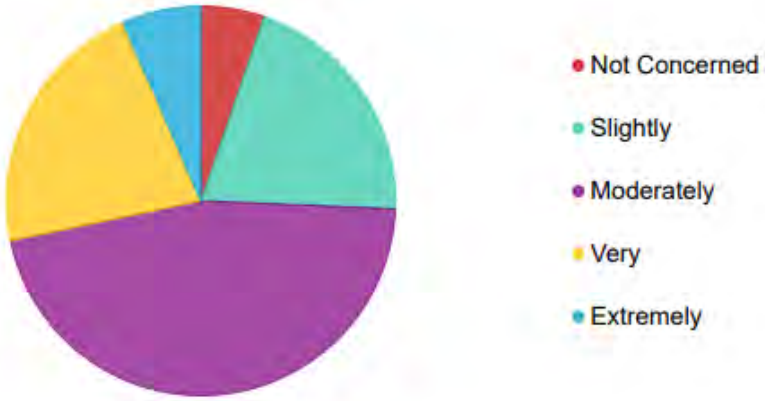
Cyber Attack *



Answers	Count	Percentage
Not Concerned	8	5.26%
Slightly	29	19.08%
Moderately	54	35.53%
Very	40	26.32%
Extremely	21	13.82%

Answered: 152 Skipped: 0

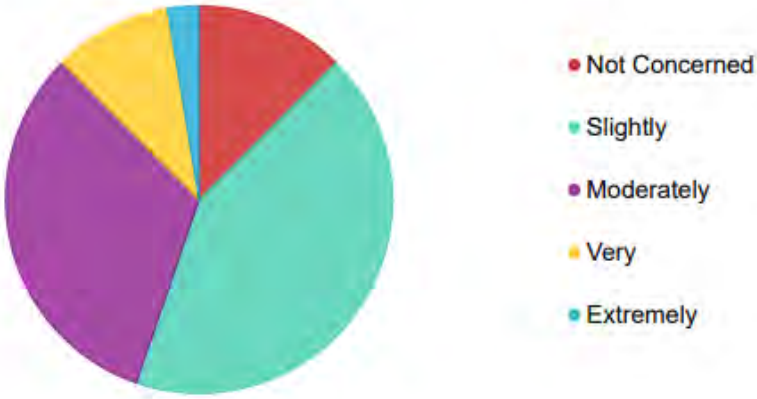
Earthquakes



Answers	Count	Percentage
Not Concerned	8	5.26%
Slightly	31	20.39%
Moderately	70	46.05%
Very	33	21.71%
Extremely	10	6.58%

Answered: 152 Skipped: 0

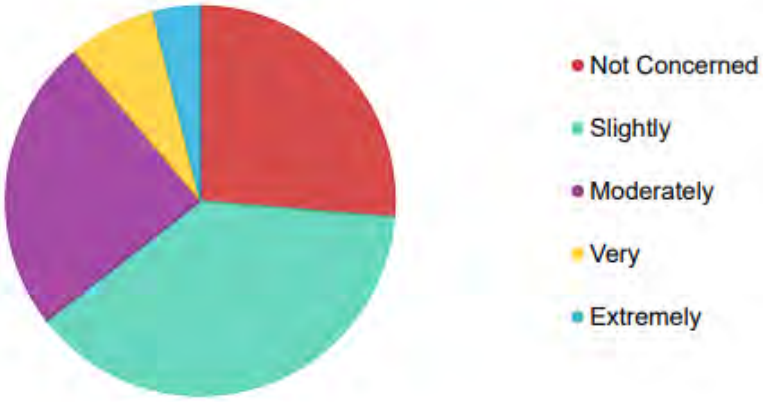
Flooding *



Answers	Count	Percentage
Not Concerned	19	12.5%
Slightly	65	42.76%
Moderately	49	32.24%
Very	15	9.87%
Extremely	4	2.63%

Answered: 152 Skipped: 0

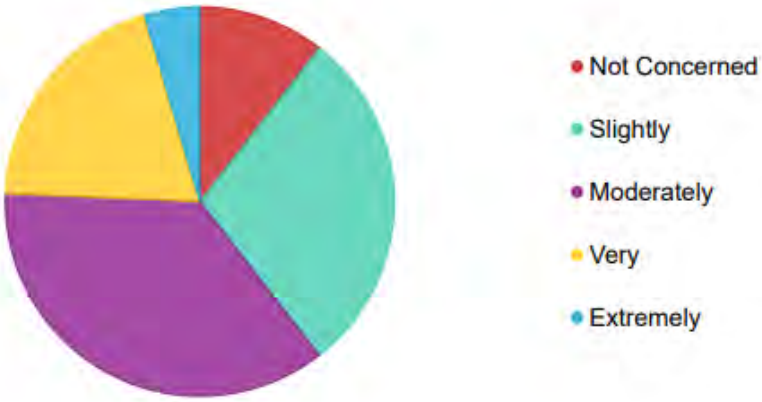
Ground Failure (Landslide / Erosion) *



Answers	Count	Percentage
Not Concerned	40	26.32%
Slightly	58	38.16%
Moderately	37	24.34%
Very	11	7.24%
Extremely	6	3.95%

Answered: 152 Skipped: 0

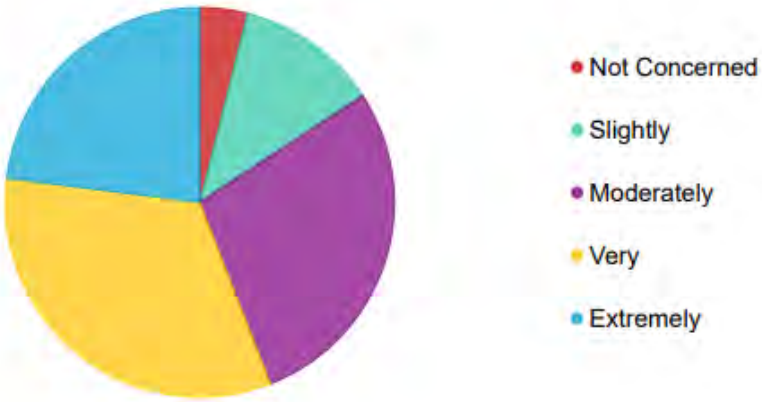
HAZMAT Incident *



Answers	Count	Percentage
Not Concerned	16	10.53%
Slightly	44	28.95%
Moderately	55	36.18%
Very	30	19.74%
Extremely	7	4.61%

Answered: 152 Skipped: 0

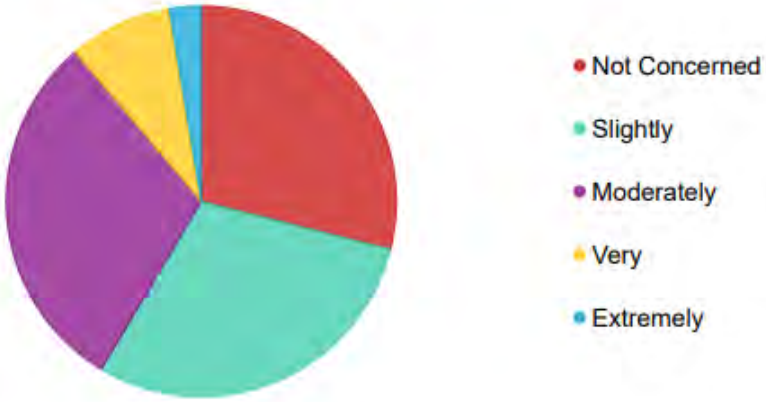
Severe Weather *



Answers	Count	Percentage
Not Concerned	6	3.95%
Slightly	18	11.84%
Moderately	43	28.29%
Very	50	32.89%
Extremely	35	23.03%

Answered: 152 Skipped: 0

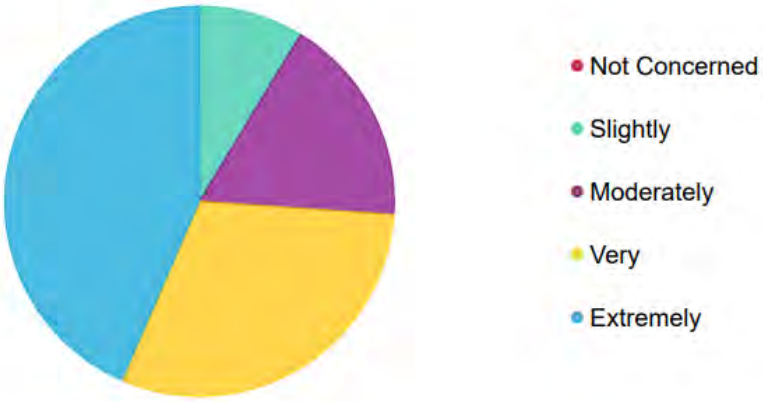
Terrorism *



Answers	Count	Percentage
Not Concerned	44	28.95%
Slightly	45	29.61%
Moderately	46	30.26%
Very	13	8.55%
Extremely	4	2.63%

Answered: 152 Skipped: 0

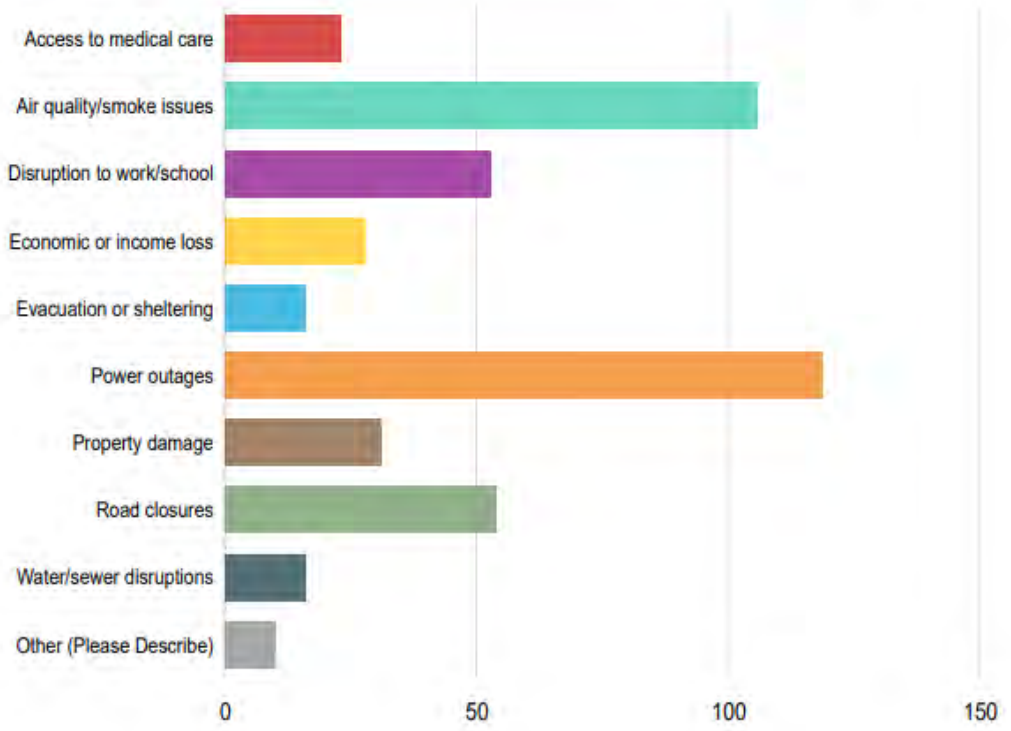
Wildfires *



Answers	Count	Percentage
Not Concerned	0	0%
Slightly	2	1.32%
Moderately	4	2.63%
Very	7	4.61%
Extremely	10	6.58%

Answered: 23 Skipped: 129

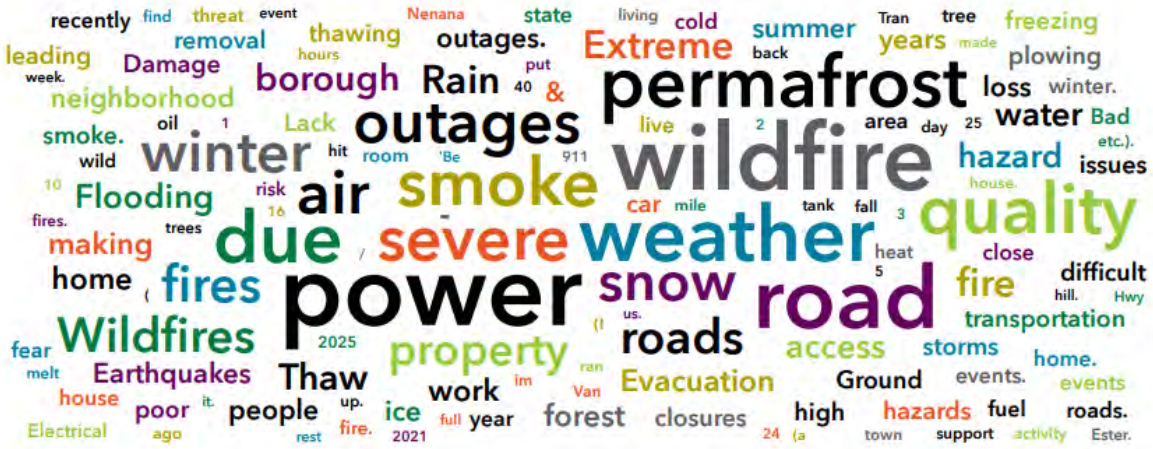
How have these hazards affected you, your household, or your neighborhood in the past five (...



Answers	Count	Percentage
Access to medical care	23	15.13%
Air quality/smoke issues	106	69.74%
Disruption to work/school	53	34.87%
Economic or income loss	28	18.42%
Evacuation or sheltering	16	10.53%
Power outages	119	78.29%
Property damage	31	20.39%
Road closures	54	35.53%
Water/sewer disruptions	16	10.53%
Other (Please Describe)	10	6.58%

Answered: 147 Skipped: 5

Describe hazards you've personally experienced in the FNSB.



Response	Count
Wind-induced tree fall trapping us on Murphy Dome for 6-days in fall 2024; had to get cut out by forestry. Wildfire evacuation (most recently shovel creek), road closures due to fire activity, road destruction due to permafrost thaw, structure damage from permafrost thaw, erosion from permafrost thaw, air quality from wildfire smoke EVERY YEAR	1
Wildfires, snow/ice storms, bomb/active shooter threats/false reports	1
Wildfires, smoke, power outages, earthquakes.	1

Wildfires, electrical outages	1
Wildfires, Earthquakes, Severy Weather events.	1
Wildfires close to home. In a 'Be Ready' state for a month in summer 2025. Winter snow storm several Christmases ago when the Old Nenana Hwy was impassable (except for snowmachines) for about a week. Why aren"t wildfires listed as a hazard in the above questions? They are my number one hazard concern, rating (for me and my household) as "very" to "extremely" concerned.	1
Wildfire, eielson fuel tank expulsion over eielson farm road, many and extended power outages, earthquakes, road closure, extreme weather, cyber attack	1
Wildfire, earthquake, extreme weather, icemagedden comm towers going down because of weather	1
Wildfire very close to home. Flooding due to prior wildfires creating hazardous flash flood situations. Rain-on-snow events in the winter creating tons of ice, damaging cars and making unsafe conditions. Permafrost thaw making roads uneven and less safe.	1
Wildfire smoke. Threat of fire. Permafrost changes causing damage to my property - ground sinking, trees falling on structures. Extended periods of power outage and/or internet outage. Lack of primary care physicians in Fairbanks.	1
Wildfire smoke, close proximity of wildfire. Extreme whether (wind/ snow/ rain) contributing to power outages and making roads impassible.	1
Wildfire smoke and power outages.	1
Wildfire smoke	1
wildfire is always a concern. After living in the same neighborhood for over 40 years, 2 out of the last 5 years there have been sinkholes due to thawing permafrost that almost made our service district road impassable.	1
Wildfire evacuation	1
Wildfire encroachment and evacuation. Last summer, it seemed like I got conflicting and confusing information from multiple sources regarding the location and status of the wildfire close to my home. Power outages and property damage in the winter from downed trees. Also, our mailbox has been destroyed by the snow plow truck and the driveway berm almost impassable.	1
Wildfire dense smoke. Health hazard and road closures.	1
When I lived in Salcha, flooding was a major issue and the bridge has helped but ???? Now I live in Fairbanks and recognize that this could become an issue but also wild fires.	1

Well, I used to live in the southern portion of Soring Glade subdivision. The road basically melted. I had to find a place to park my car 6/10 of a mile from my house, on the other side of the inpassable portion of the road, in the yard of someone who allowed me to (a stranger, whom I repaid with grocery gifts) so that I could go back & forth to eotk, & yhen I had to trek thru yhe mud in high boots ftom my house. Fun with groceries! And with laundry (I hsd running water but no washer/dryer). I was a person in my 60s pulling a red sled full of laundry. Emergency vehicles could not make it doen there, nir could Van Tran (I had elderly & disabled neighbors) nor, at times, fuel oil & water trucks & when they did, thry furthet annihilated the roads. For 16 years, the road was finr. For the most recent two years, it was not. I had an awd car & there was no way I could get to my house! Absolutely, definitely melting. I moved. That area would be a firetrap in a wildland fire. Lots of spruce.	1
We had a wildfire come within a couple of miles of our house before it was controlled and we have had several multi day electrical outages.	1
Water drainage erosion issues with property repair costs. Road issues due snow and ice. Power outages. False credit card charges due to account security problems.	1
Though not personally affected by fires as far as property goes, the smoke reduces outside exposure.	1
They aren't plowing the roads, which makes it dangerous	1
The wood drying kiln should NOT be right in town, doubling up with the power plant to put off so much pollution in the dead of winter. I literally choked and then had to hold my breath to get from my car to my office once this winter.	1
The thawing permafrost is indicative of climate change which will bring longer fire seasons and thus more fires in the years ahead.	1
The proximity of wildfires.	1
The most common hazard I have experience is poor air quality from wild fires.	1

Thawing permafrost and melting of ice-rich soils that have impacted my house, well, and leach field. Air quality from wildfires in the summer and inversion in the winter.	1
Snow removal	1
Smoke/air quality Permafrost thaw Road closures	1
Smoke, fire danger, hazardous winter weather, permafrost thaw affecting structures and home on property that required significant financial investment to address, frozen pipes exacerbated by shifting/thawing ground	1
Smoke in the air, heat, extreme cold, lack of transportation, lack of medical specialists	1
Smoke from wildfires Fear of fires in the borough, evacuation or property loss.	1
Severe weather, wild fires, permafrost thaw	1
Severe weather, snowfalls that our DOT and local snow removal cannot keep up with. It seems no matter the amount of snow, we simply cannot handle snow removal anymore. Schools closed this year 3 days because of <8 inches of snowfall. The roads turn to shit because the plows don't begin plowing until the snow stops which means people are driving on the snow creating hard pack ruts and bumps that are destroying our vehicles in the winter while shitty roads destroy our vehicles in the summer. We roads designed for snow removal if we aren't going to pay for people and equipment to remove it, lets make it as easy as possible to push out of the way for those few people we do have plowing our roads.	1
Severe weather, snow-Apocalypse in 2021 was bad but the aftermath with power outages and then flooding during spring melt off revealed the unpreparedness of our area. Subdivisions in West Fairbanks need culverts, appropriate drainage, etc and that clearly has not been a priority addressed through road commissions or public planning. Flooding causes damages to home, they because difficult to sell and insurance costs skyrocket. We can't change the weather, but we can be more prepared for severe weather situations.	1
Severe weather, earthquakes	1
Severe weather in summer and winter.	1
Severe snow storms or freezing rain knocking out power and making transportation difficult or impossible. We've had some crazy heat waves too. Workplace violence is extremely prevalent in healthcare and we're seeing it more in the community (bomb threats, active shooter threats, actual shooting incidents in stores, etc.). Wildfires always have an effect on the air quality but I'd take that over evacuating my home any day, which thankfully has never happened.	1
Set level for potential evacuation due to an approaching wildfire. Earthquakes. High levels of wildfire smoke and poor air quality under the inversion.	1
Septic issue, foundation issues. Earthquake damage.	1
See above due to Mother Nature	1

Roads affected by permafrost making them difficult to drive on.	1
Road conditions. Ice, potholes. Inconsistent public transportation during bad weather	1
Road closures due to downed trees/powerlines and snowfall. That impacted fuel and water deliveries. Makes travel to work treacherous. Also 911 operations being disrupted from the windstorm. Pure incompetence not having working and filled generators at the necessary points FECC calling you out on that. UAF had to supply emergency support to get the borough back online. It is a good thing some people put others peoples safety before personal vendettas...Honestly the way the borough is ran and the way the city is ran that is the biggest hazard to the borough. Everyone in the borough and city leadership should resign so we can restart this train wreck of a borough.	1
Road access to job for income to pay bills	1
Rain in winter - freezing rain leading to car crash in 2018 Wildfire - smoke, friends and their pets evacuating Permafrost thaw - road conditions deteriorating more rapidly than in the past Severe weather event leading to moose die-off a couple years ago Flooding - no access at times to friends off Perkins Drive	1
Quality of roads due to permafrost melt, specifically Farmer's Loop is warping badly since repaved. In addition the quality of snow plowing during snow events by the state, borough, and city has been inadequate making unsafe driving conditions.	1
Proximity to wildfires	1
Prolonged difficult driving conditions after severe winter storms. Power outages, often associated with wind events. Damaged roof due to snow/rain/snow/ice winter weather event.	1
Power Outages, Rain in Winter, Wildfire Smoke/Ash, Flooding	1

Power outages, ice storms, wildfire, earthquakes	1
power outages, unpassable roads.	1
Power outages that lasted weeks requiring emergency backup power and loss of income to maintain home in subzero temps with no power Fire- evacuation and loss of property- loss of income from having to miss work to protect property. Health issues from air quality	1
Power outages from snow/ice/wind events. Smoke and evacuation notice from wildfire. Impassable mud conditions on borough maintained dirt roads. Sinkhole from thawing permafrost threatening road.	1
Power outage for more than 24 hours at below zero temperatures.	1
Poorly maintained road clearing after freezing rain	1
Permafrost thawing damaging buildings and utilities.	1
Permafrost Thaw - Neighborhood ground settlement and erosion. Birch hill area neighborhood roads, access trails and power transmission line poles in ROW. For example: paved bike path to birch hill recreation area and the City lights blvd. School bus stop trail leading up the hill. This area settlement resulted in GVEA relocating a main power line transmission pole due to extensive settlement.	1
Permafrost melting under our house. Forest fire in our neighborhood, Summer 2025	1
Permafrost- McGrath is so bumpy vad for car / replaced septic w/lifewater $$$$$$$ Drainage- washed rd away Bad land, can only grow garden in raised beds	1
Our biggest hazard is wildfires. As many borough residents do, we live in a forest. The fear of potentially being in the path of a big fire, like last summer's Nenana Ridge Complex is high. As is the fear of one of our neighbors starting a fire that would spread really quickly. It is very comforting to know that resources are available to protect us.	1
Nothing recently, but in the past power outages were a problem. We now have a backup generator.	1
None as of yet.	1
No power for hours, wildfire smoke, road detours that delay appointments.	1
Mostly we've experience severe air quality issues due to wildfire smoke. Occasionally we are concerned about the need to evacuate because of wildfires. Separately, we are concerned about any supply chain disruptions that could affect our ability to access meds for type 1 diabetes.	1

More recently, I have experienced more severe weather detrimental (increased snow and ice load, falling tree hazards, flooding due to blocked culverts, limited road access since we only have one road in and out our neighborhood) Additionally to clarify the terrorism question, im thinking about White Supremacy and racism. I have been threatened, attacked, followed by White people in the borough. I have been denied assistance because of my race. I have been denied resources and recourse because the White employees leading those departments didnt consider my experience racism or discrimination. The lack of understanding our local leaders have of the lived experiences of their non-White marginalized neighbors and constituents really limit the ways we can access protection, resources, and recourse.	1
Minimal power outages that are disruptive but not a huge worry. Even though our hospital is fantastic, access to doctors on a more regular basis is difficult, usually scheduling many months out. The affect climate change is having on ground movement, subsidence and road quality is deeply concerning.	1
Loss of power/heat Lack of grocery on shelves High winds have taken a toll on our older trees	1
Loss of power Spotty fuel delivery	1
It is all wildfire and severe weather. On the wildfire front, friends have had to evacuate. I've taken an economic hit with work delays or cancellations. I work outside so I am at risk of getting caught out in fires if a new one starts up. I've had to cancel travel plans due to road closures. And the air quality is a serious health concern for all Fairbanksans whether they recognize it or not. As far as severe weather is concerned I think road conditions cause a marked increase in hazards I face. I see accidents all the time and I think daily how I take my life (and the lives of others on or near the roads) into my hands when I get behind the wheel. It is scary out there and everything we can do to mitigate road hazards due to winter weather is great.	1
in the borough - permafrost melting damaging buildings and property south of the borough - lost property and buildings in the 2025 Bear Ck fire.	1
In my personal life I have never been effected by "terrorism" in the way that the term is usually used by our government institutions. However, my community is being effected by the fear and danger stemming from the increase in ICE activity in Alaska and the rest of the country.	1

In my experience, wildfire has posed the most likely risk that is mentioned here. But the most frequent hazard in Fairbanks is a plethora of irresponsible drivers that have no consequences for endangering others and causing thousands of dollars of property damage.	1
I have been most effected by poor air quality during wildfires and rain in winter events. I have also experienced prolonged power outages and a sink hole that opened up in my driveway. While none of these events were catastrophic I did have to spend extra money on repairs and limit time outside when the smoke was bad.	1
How could you not have wildfire on that list? Maybe that one's addressed elsewhere in the survey? If so I couldn't find it. I feel like this is a significant hazard across the entire giant Borough., I live in Ester. Of all the hazards you've listed there that is the one that has recently affected the most people and in my opinion is the biggest threat hanging over us in Ester.	1
Heavy snowfall with slow or inadequate snow removal (probably also a state maintenance issue) Wildfire smoke every summer	1
heavy snow caused cancellation of medical appointment due to provider absence, severe smoke from fires, rain and ice storms in winter led to road closures, tree damage, and power outages.	1
Heating oil companies oil spill with a significant issues to property and accessibility to our home, taking over a year to fix, with no accountability from the Borough's standpoint.	1
Ground failure that nearly blocked our only way out of the neighborhood (sinkhole formation). Severe weather (increased snowfall, both warmer and colder temps, rain in December, etc.).	1
Frozen pipes, furnace outage, air quality (asthma issues), clients unable to come to our Center so we can work with them, permafrost causing sinking group so had to change water tank and sewage to above ground.	1
Freezing rain impacting roads and schools. Exposure to wildfire smoke. Shifting and cracking house due to permafrost melt.	1
Forest fires, drug addicts, extreme cold	1
Forest fires over 25 years. Electrical line transmission being hit by lighting more frequently in the last 10 years. Stronger winds.	1
Forest fires and the smoke they generate	1
Forest fires	1
Forest fire smoke which restricted lifestyle to mostly indoor living, and fire-related road closures. We have also experienced wind-related power outages several times.	1
Flooding, Earthquakes, Cyber, Severe Weather (Rain in Winter), Wildfires/Smoke, Protests	1

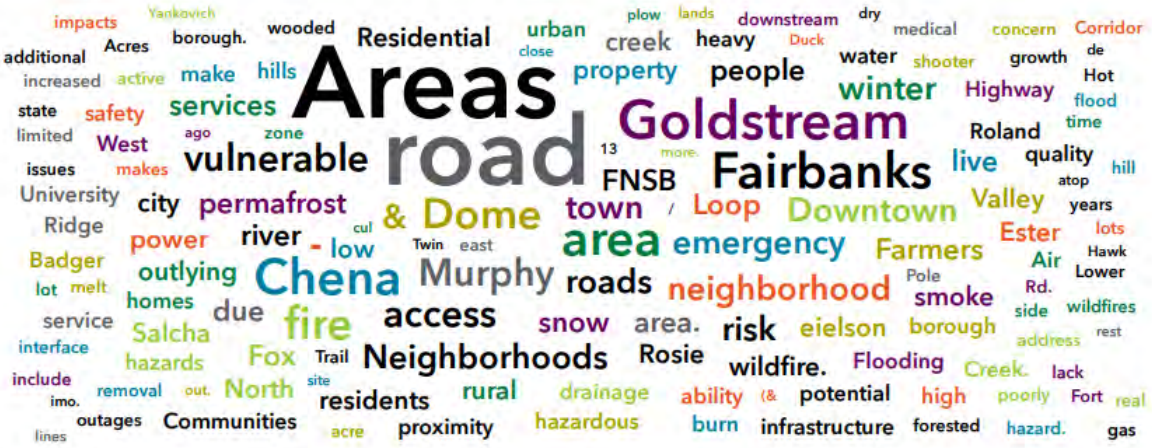
Fires have burned within a mile and a half of my home. Fire mitigation is number one for all of us just iutside the city.	1
extreme weather, earthquake, wildfire	1
Extreme freezing temperatures quick resulted in frozen water line. Power and internet outages.	1
Extreme fires every year, not having adequate assistance	1
Evacuation due to forest fire	1
Earthquakes (though small), smoke, wildfire threat, winter air quality, power outages when im not allowed to burn and heat my household while the government sells our state to the companies making these problems worse.	1
Earthquake, wildland fire, air quality, extreme winter weather	1
Damage to pipes and buildings due to permafrost	1
Breathing hazardous smoke. I appreciated the clean air room at the library. Frozen/burst pipes: have had to evacuate my home in winter when there were no hotel rooms available for a few weeks due to popular tourism time (Feb/March). I lived in one room in my home with no running water until a hotel room opened up. Was manageable thanks to the Mary Siah center pass for showers, etc (might make that a free option for emergency evacuations like mine? Although the pass was not expensive).	1
Beside power outages. None	1
Bad government, misappropriation of funds, poor quality education with very low standards, no plowing or road maintenance for our neighborhood's roads in spite of high property tax rates, zero water or sewer infrastructure in an established neighborhood despite high property taxes.	1

Air quality due to severe cold or fires near Fairbanks. Rain events in winter that impact transportation and electric transmission. I would say in town for air quality	1
Air quality - outside activities cancelled with regards to fires, places like Himalaya, Goldstream and Chena hot springs	1
I have experienced several environmental hazards that impact my family and employment. Wildfires have caused dangerous smoke, closed roads and poor air quality, personally affecting my household. Severe winter weather has closed roads to Anchorage, preventing travel to family during emergencies. Extreme cold and storms have caused power outages, leading to food loss and risk of frozen pipes. Weather-related school closures have required me to miss work to care for my child. Additionally, severe weather disrupts transportation services relied upon by individuals I support at work, limiting access to essential services such as Van Tran, school bus, or other forms of public transit.	1

Answered: 102 Skipped: 50

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Identify vulnerable neighborhoods or areas in FNSB.



Response	Count
Yankovich road due to proximity to forested University lands	1
Wooded areas-fires. Snow dumps- directionally dependent, usually.	1
West Chena Hills, East Chena Hills, Kopenen Estates, all homes along Roland Road, homes on Duck Hawk Rd., Waugstroe, Haman Rd. Additionally, Roland Road allows for little to no drainage or snow removal on the side that is adjacent with Twin Lakes due to inappropriate property lines and easements. This stems from poor planning years ago and has not been remedied. The Borough planning/road commissions need to go on site and address Roland Road and Pickering Drive to address widening the road, ability to plow and remove snow, provide drainage on both sides of each road so that during heavy rains and during spring melt off, all of the water running from atop Chena Ridge that makes it's way down to these areas has clear and simply drainage access. Instead of flooding property, roadways, and pooling in the lower lands.	1
University West's threat of drop bears.	1
Two Rivers	1
Town and Country Trailer Part, where I live seems to have way too many water issues which causes much stress.	1
Those with limited emergency services access	1
The whole place is vulnerable to the downstream effects of greedy local governments lining the pockets of their family and friends and pursing pet projects while enacting regulations to make surviving the winter prohibitively expensive while threatening those trying to affordably heat their homes with fines.	1

The urban interface for wildfires is extensive throughout the borough. There have been a number of active shooter events over the past several years and the potential exists for more.	1
The rural residential area of Salcha outlined in the Salcha-Badger road subarea plan should be rezoned and remain mostly larger treed lots (preferably 10 acres or more). Further growth off connector roads should be avoided as increased growth requires increases mitigation response. Reasons include the proximity to the boundary of eielson (well within the eielson HAFZ), noise pollution from eielson, potential hazards of eielson nuclear reactor, much of it is in a flood zone, proximity to the Salcha fault, it is in the Delta watershed where additional or poorly maintained septic/wells on one acre lots could have negative impacts, poor/dirt road (part rsa/part state not in FAST area) maintenance/plowing, frequent power outages, more traffic on cell towers/connectivity issues, transfer point 13 miles away leading temporary residents to dump hazardous waste, safety hazards from increased traffic/off leash pets/neighbor contacts, no emergency medical facilities, no FNSB residential services	1

DRAFT

The lack of access to evacuate from the Murphy Dome area with only one way in and out. The access to Fox via Old Murphy Dome for an alternate route of escape should be evaluated and considered if the Murphy Dome road ever has a problem or hazard.	1
The climate, energy, and infrastructure crises makes us all vulnerable really. I can only really speak on Farmers Loop, Aurora, and Downtown areas. Those are where I live and spend my time in.	1
Sunny hills and Lemeta	1
Steel creek/gilmore trail (and Fox). Fire is a real concern because egress is limited.	1
Steamboat Landing & Rosie Creek for Flooding. Haystack, Himilaya, Chatanika River Corridor, Salcha River Corridor and Rosie Creek area for limited access routes.	1
Southern portion of Springglade Subdivision. Also thr neighborhood south of Van Horn Rd, both east & west of Peger. Completely impassable mud roads at times. And the natural gas storage tanks are back there! People live in that area. While everybody's talking about incentivizing housing, let me tell you that these are the types of areas in which average non-affluent Fairbanksans are forced to live, because of ever-increasing rents based on military rates. And there are cabins, both log & frame, all over Fairbanks like this that are firetraps. A good example is Iniakuk Rd (& Reed Circle etc) back there. Impassable roads - orphan roads! - densely populated, all wood construction, probably no adherence to building codes. I also wonder why people are coming to Fairbanks & building dry cabins to make money off of, as rrntals. I thought new outhouses were outlawed in the borough! Definitely a groundwater hazard. Easy way to make money tho. Terrible imo.	1
Smoke from fires and ice fog often rest in the low lying areas but the forest fire smoke can be anywhere.	1
Shannon park	1
Rural communities on the outskirts of the borough	1
Rural areas with road service areas overwhelmed by heavy snowfall	1
Rosie creek/ Perkins area is susceptible to Tanana River flooding on a fairly regular basis.	1
Rosie Creek, Steamboat Landing, Salcha	1
Residential areas within black & white spruce greenspaces. Residential areas with permafrost.	1
Permafrost areas, areas near the river, low income areas with poorly built structures	1
Outlying wooded areas	1
Outlying areas / Chena Hot Springs road for wildfire. Steese highway for permafrost melt making the road dangerous.	1
Outlying areas (for wildfire).	1

Outer fairbanks neighborhoods built on thawing permafrost, in the unmanaged forest are ready to sink and or burn any day and no one seems to care - Goldstream, Farmers Loop, chena pump, Chena Hot Springs Road, most of North Pole. I have asked the borough bout doing a controlled burn on my property but got nowhere.	1
North Pole Farmers Loop Everywhere downstream of Fort Knox	1
North Pole around Bradway	1
Murphy Dome to Goldstream to Fox	1
Most of the Goldstream Valley is at risk for wildfires and permafrost loss.	1
McCall subdivision on Murphy Dome, all Murphy Dome neighborhoods, Ester, all neighborhoods, including downtown. Downtown Fairbanks could burn in a flash just like Fort Nelson.	1
Lower Spinach creek road area.	1
Isn't everywhere? But I'm in the Gold Hill area off the Parks.	1
In University West, Chena Pump Road is the only real in/out for that area. On occasion there are incidents at the gas station that cause the main intersection to close, which impacts a lot of people. I wish there was a better alternative way in and out of the area.	1
In general, any neighborhood served by one road. Residents who ive on a cul de sac may be trapped with only one road to exit.	1
I'm off Gilmore Trail.	1
ice/rains storms in winter affect everyone areas with flammable trees or material	1

I would say in town for air quality and areas around Fairbanks for fire danger	1
I think communities on the edges of Fairbanks are at the most risk from wildfire. Fox, Ester, Goldstream, Rosey Creek. All these folks have property directly in the line of fire.	1
I live in Goldstream, and I believe residents in my area are vulnerable due to urban/rural interface wildfire danger and only one emergency egress route.	1
Goldstream, black spruce/permafrost neighboorhoods. For smoke in the winter - Badger Road area.	1
Goldstream Valley.	1
Goldstream valley is sinking into the permafrost according to the geologist that I asked to come to my one acre lot to tell me what I could do. He suggested moving to the hills.	1
Goldmine Trail area	1
For widfires, all neighberhoods outlying the City of Fairbanks: Old Nenana Highway, Ester Dome, Parks Highway, Chena Ridge, Farmers Loop, Murphy Dome,Goldstream Valley, and many others.	1
For fire and smoke - anything on the edges of town and beyond. For hazardous air quality in winter - low lying areas under the inversion such as downtown Fairbanks and North Pole.	1
FNSB has a significant amount of people and infrastructure located outside of the urban center where a wildfire spreading at the neighborhood level would be especially destructive. This would include the areas of Chena Ridge, Ester, Goldstream Valley, Fox, Badger Road, and Moose Creek. These areas are also vulnerable because they are not hydranted and FNSB has an overall lack of fire tenders to deliver enough fire water to fight an urban firestorm.	1
FNSB	1
Flooding in low areas by the river. Ability of snow removal to get to community side roads in a timely manner.	1
Farmers Loop	1
Families connected to powerlines that have only a few families during power outages	1
Every neighborhood is vulnerable to wildfire. Irresponsible drivers are a risk across the entire borough.	1
Edanella Heights service district	1
Downtown is particularly bad due to the concentration of people & cars along with the polluting nature of some of the buildings/businesses.	1
Downtown has very old infrastructure and is near the river.	1
Downtown The area between Fred Meyer and Costco/Safeway that is near the train tracks	1

Cripple Creek. It has dangerous road access every time it snows. Deliveries get delayed or canceled, power goes out, just a train wreck. The state does good fire management at least.	1
Communities along Badger Road are often plowed last, leaving residents snowed in for extended periods. This can delay travel to work, school, medical appointments, and other essential activities, increasing isolation and creating safety risks during emergencies. Tightly packed neighborhoods in town, such as those along College Road, face additional hazards during heavy snowfall. Accumulated snow often narrows roads to a single lane, making driving dangerous and increasing the risk of accidents. Reduced road width also slows emergency vehicles and limits safe access to homes. Overall, neighborhoods with delayed plowing, high population density, and narrow roads are more vulnerable to winter weather. Transportation disruptions in these areas directly affect residents' safety, access to essential services, and ability to maintain daily routines during severe conditions.	1
Birch hill area neighborhoods.	1
Ballaine Lake RSA, Reed Acres RSA	1
Areas outside of town - Fox, Goldstream, Chena Pump.	1
Areas outside of the emergency services like Two Rivers. I have concern for people outside of the fire service district.	1
Areas outside of fairbanks city limits. The more rural you get the less priority there is to restore power	1
Anywhere outside the city of Fairbanks core that is forested is at severe risk of wildfire. I feel like the UAF campus is an area at pretty high risk of active shooter situations.	1

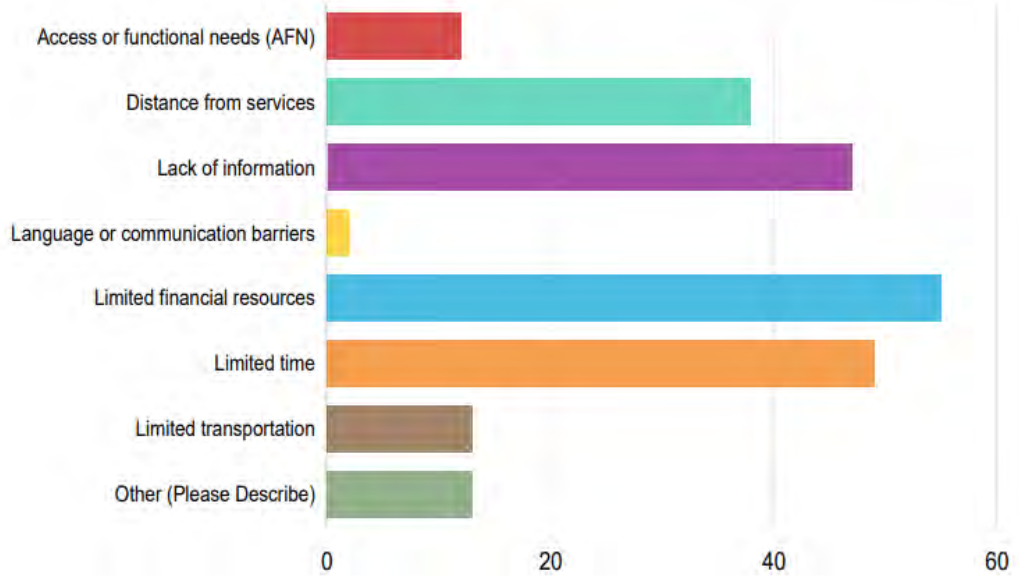
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Anyone near routes where hazardous materials are transported, or near where they are stored. Anyone living or working in a structure which cannot withstand an earthquake. Anyone living in a flood zone or where there is riverbank erosion. Anyone whose communication relies upon electricity so that when the grid goes down, they have no means of calling for help. If there is a serious cyber attack, we would not be able to operate emergency services, utilities, communication, banking or commerce. It has the potential for catastrophe.	1
Any neighborhood surrounding the city of Fairbanks due to high percentage of trees.	1
Any neighborhood effected by the new fire engine that isn't serviceable yet.	1
All the above	1
All of the highways and intersections	1
All of FNSB and Alaska!	1
All Neighborhoods in FNSD are vulnerable to large-scale mining. Many impacts!	1
Airport	1
Air quality in winter is worst in town, by the river, where all the schools are located. In summer it is more evenly distributed - just depends on where the fires are and what direction the wind is blowing.	1

Answered: 75 Skipped: 77

DRAFT

Which challenges make it harder for your household to prepare for or respond to emergencies?



Answers	Count	Percentage
Access or functional needs (AFN)	12	7.89%
Distance from services	38	25%
Lack of information	47	30.92%
Language or communication barriers	2	1.32%
Limited financial resources	55	36.18%
Limited time	49	32.24%
Limited transportation	13	8.55%
Other (Please Describe)	13	8.55%

Answered: 114 Skipped: 38

Have you noticed any changes in hazard frequency or severity in your area?

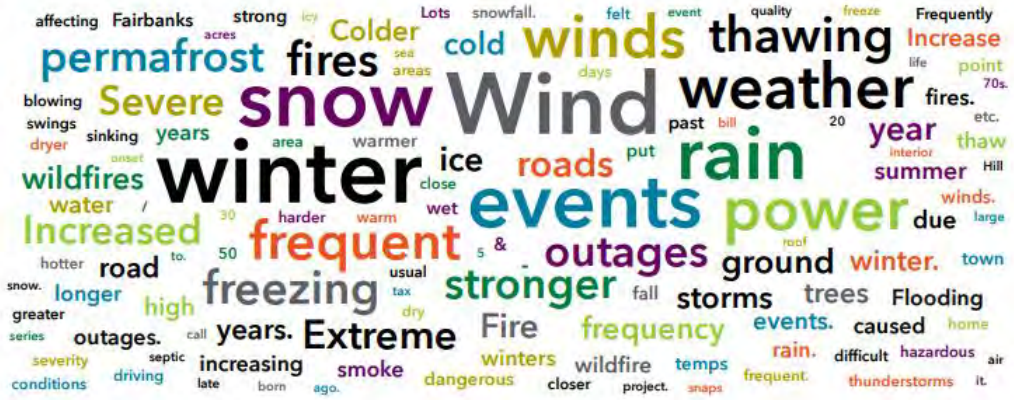


Answers	Count	Percentage
Yes	105	69.08%
No	31	20.39%
Unsure	12	7.89%

Answered: 148 Skipped: 4

DRAFT

If yes, please describe.



Response	Count
Without sea ice, the interior seems to get more rain and snow. Thankful for flood control project. Important to keep it maintained.	1
Winter weather is cycling between snowing and turning colder more frequently than ever before. I was born here and am in my 70s. It also seems like we are having more moisture overall, summer and winter.	1
Winter power outages, road clearing after large snow fall	1
Winter has become a series of extreme weather events, wet fall, late onset freeze, extreme cold snaps followed by rain events followed by repeated snow storms. Gone are the days of predictable winter weather. Power outages are more frequent. Struggling to keep houses warm and roads passable are more difficult with cold events and rain on snow events.	1
Winds, fires, flooding, ground sinking and thawing, pollen, hotter temps, air quality - all of that has worsened and gotten harder to deal with over the years.	1
Winds have definitely increased over the years.	1
Winds and wildfires	1
Winds and more winter storms	1
Wind, far more ice events (freezing rain) impacting roofs and driving	1
Wind	1
Wildfires close by and permafrost thawing on our property. power outages due to high winds blowing trees down on lines. One tree on a line caused a small fire but we were home so could call and get firefighters to put it out before it spread.	1
Wildfires	1
Wildfire smoke has increased in frequency and severity in last 30 years.	1
Wildfire season is longer and more intense. More ice storms and power outages	1

We have more severe thunderstorms and wind in Hamilton acres than in years past, putting us at greater risk of power outages and fires. This year I worry about drainage in April.	1
We are 20 inches or so already over our usual snowfall. Permafrost is melting like crazy. Temp.s are generally warmer.	1

There is a greater frequency of weather extremes (more wind, more freezing rain, etc.). Also, permafrost is observably thawing in many locations.	1
The weather has caused more hazardous driving conditions and our tax dollars are not being put towards neighborhood road maintenance.	1
The flooding in my area is tough to manage when the snow melts affecting my foundation of my home with the saturation.	1
The excess snow these past two years has caused a difficulty to get out of my West Point Circle home. The snow removal has been really slow so I can't get to doctor appointments when I need to.	1
Thawing ground. More severe or atypical weather events. Always forest fires.	1
Thawing ground, extreme weather - either too dry or too wet. This winter (25-26) extreme cold AND excessive snowfall.	1
thawing ground and wildfire concern with hot dry weather, Rain in winter makes the roads extremely dangerous for those of us living in the hills	1
Thawing ground and septic issues	1
Thaw ponds are developing in areas where I ski. Groundwater elevation has increased rapidly to a point that I need a mounded leach field and was quoted $45k to install. My well has gone artisan and there few, if any, affordable alternative solutions.	1
Stronger winds, thawing gtound, rain in winter, icy, wet snow events	1
Stronger winds, more power outages, more downed trees	1
Stronger winds, hotter dryer summers, increased wildfires, more lightning, warm winters with freezing rain.	1
Stronger winds, freezing rain	1
Stronger winds, colder winters, smokier summer	1
stronger winds and longer period of severe freezing temps.	1
Stronger summer and winter storms and winds.	1
Strong wind brought down trees, one of which crashed on my roof, causing damage. Heavy snow amounts are difficult to manage. There's nowhere to put the snow and I'm worried about my roof.	1
Stayed above	1

Signs of increasing permafrost loss is damaging buildings and roads.	1
Severe winter events like rain in the winter, wind events	1
Seem to have more and more power outages every year but the electric bill goes up and up… GVEA does not seem to invest in improvements to the grid or even maintaining it well to withstand our winter storms	1
Rosie Creek / Marmot Hill area has had less events in the past several years.	1
Permafrost thawing	1
Over my lifetime, frequency of wind events in Fairbanks seem to have significantly increased.	1
Our road service contractor is terrible (McGrath Estates), insufficient service, inexperienced operators	1
more winter rain/ice storms/heavier snow storms terrorism threats to public officials and schools and employees	1
More windy. Longer extreme cold snaps. More freezing rain. Bigger wildfires. More serious crime and transient populations.	1
More wind, warmer winter temperatures creating freezing rain & heavier snow fall.	1
More wind, snow and rain.	1
More wind, more high water, more fires	1
More wind in fairbanks	1
More wind events. Warmer winters with rain. Black ice/ice on roads through winter. Flooding in winter.	1
more wind events, sinkholes	1
More wind events, frequency of wildfires	1
More wind and freezing rain events. Temperature swings in winter.	1
More thawing ground, more ice events in winter, more wind threatening trees near property structures	1
More summer wildfires in proximity to fnsb homes and buses. Need fire breaks around homes and businesses. Brush clear the electrical power ROW. More frequent neighborhood roads and trail damage due to ground thaw settlement and erosion. More frequent winter power outages. I don't think GVEA battery backup system is working as it has in the past. These frequent and short duration power disruptions damage life safety, security, monitoring and appliances.	1
More severe weather and fires.	1

More severe snow/ice/wind events. More frequent and closer wildfire. Thawing permafrost in a lot of areas, sometimes affecting roads and structures.	1
More permafrost melt, more wind, warmer winters (except this year!LOL!)	1
More people create additional challenges, especially with fire hazards, water hazards, dumping hazardous waste, spraying pesticides, more power outages, cell connectivity issues, more people walking along roadway, etc	1
More of all of it. More smoke, more fires, more winter rain, more road degradation due to permafrost melt.	1
More frequent, and stronger winds. Less frequent, and less timely, snowplowing by the State.	1
More frequent winter storms including rain in winter and dryer summers.	1
More frequent threats of wildfire. More frequent windthrow & topping of trees & powerlines due to winter/spring ice build up	1
More frequent severe weather events, stronger winds, freezing rain, heavy/wet snow, all of which impact roads and utilities, and therefore access to anything else (work, school, medical resources).	1
More fires. More smoke. Colder winters. More smoke.	1
More fires, increase in adverse weather; snow, wind etc.	1
More extreme weather events - rain, wind, winter rain	1
More extreme weather (thawing, strong winds, more rain/erosion)	1
More drug addicts	1
Lots more snow and cold than usual, harder to find medical specialists, hard to get VanTran and public transportation	1
Lots more permafrost thaw and rain events in winter.	1
Loss/breakage of trees due to high winds	1
Land is freezing and thawing faster. Roads are impassable, water runs through the driveway, and the house is sinking into the ground. Pipes are breaking because the ground is moving. Garge is about to fall over. But taxes continue to go up on the house.	1
I've lived in Fbks. 50 yrs. and yes, all of the above seem more severe, esp. this winter.	1
Its getting more frequent and more volatile	1
Its always changing - land is freezing and thawing. This year was colder longer..toll on everything, boiler, cars, etc.	1
It's been only recently (the last decade) that I've seen strong sustained damaging winds. Our snow is heavier and therefore more threatening to roofs. Along with that are the midwinter ice storms that no one had ever heard of until 5 years ago.	1
Increasing wind events, either blowing snow or the combination of wind and ice have caused significant power outages in recent years.	1
Increasing rain and snow with water drainage/erosion issues.	1

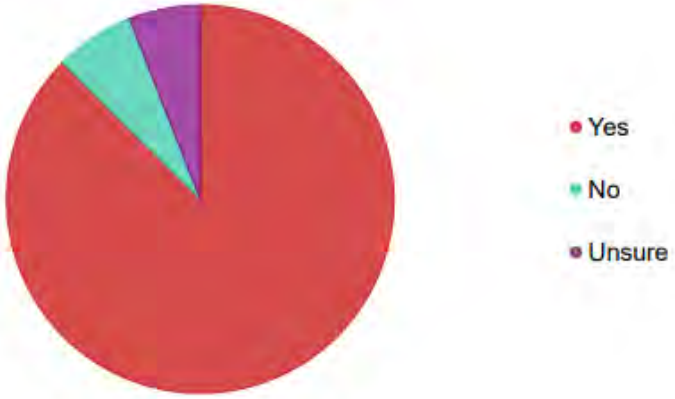
Increased weather events and impacts. I'm literally filling this out while we're under a winter storm warning.	1
Increased weather event cause fires and power outages.	1
increased precipitation year round as water causing extremely dangerous road conditions (ice storms), erosion, permafrost thaw, and flooding. Increased fires around town, not just the far edges any longer.	1
Increased frequency of winter rain events leading to dangerous ice conditions.	1
Increased	1
Increase in proximity to severe fire threats.... Frequently actively concerned about going from "get set" to "go" status - to the point it felt stressful to even go to town for basic things and leave pets at home. Eventually we boarded then in town to address this	1
Increase in extreme weather and power outages	1
Increase amounts of snow, stronger wind patterns, stronger thunderstorms with hail. Increase of smoke in the valleys.	1
Goldstream and Ballaine are demonstration the effects of permafrost melt and it is destroying the roads	1
Frequency of wild fires last summer and their locations closer to town. Winter weather this year has hit -40 and below which hasn't happened in a long time, as well as the amount of snow we have received this year is more than average.	1
Forrest fire smoke has become nearly intolerable.	1
Flooding is more frequent. Rain/ snow/ wind events seem to be creating more frequent and prolonged power outages.	1
fires, power outages, high winds	1

Fires every year or every other year with no fire services available to residents	1
Fires burn close every single summer.	1
Fires are increasing in severity and frequency. I have also felt that response to snow events from city and borough road teams is too slow.	1
fire has become a more noticeable activity in the 50 years i have lived here	1
Fire danger was much higher around Fairbanks than normal. It seemed like there were fires in all directions.	1
extreme weather, wildfire frequency	1
Extreme weather (ie. freezing rain in December), high winds, power outages.	1
Definitely more wind. Also, more thawing ground and therefore worse roads that need ever more frequent repairs. Severe winter events, including freezing rain (the worst). More frequent and larger wildfires that are closer.	1
Colder temps, more snow, more wind	1
Colder and longer cold snaps.	1
Climate change.	1
Big rain events during winter the last few years. Wind is more common. Bigger swings in temps. More days and seasons that have temps on the outer edge of normal on both sides. Then this winter having a near record breaking cold stretch. Currently getting wet snow in February.	1

Answered: 102 Skipped: 50

Are you aware of local shelters, alerts, or evacuation routes?

Alerts

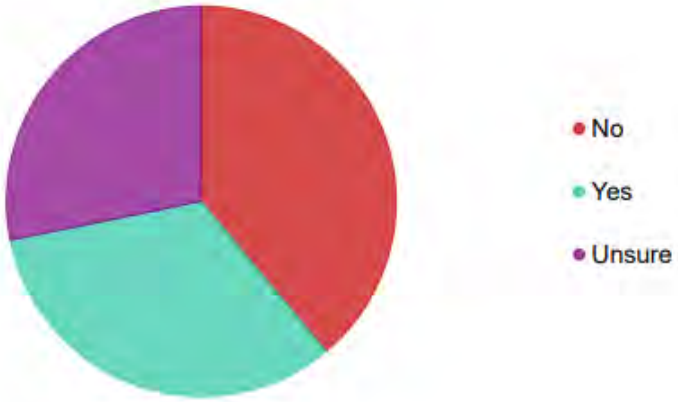


Answers	Count	Percentage
Yes	132	86.84%
No	10	6.58%
Unsure	9	5.92%

Answered: 151 Skipped: 1

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Evacuation Routes

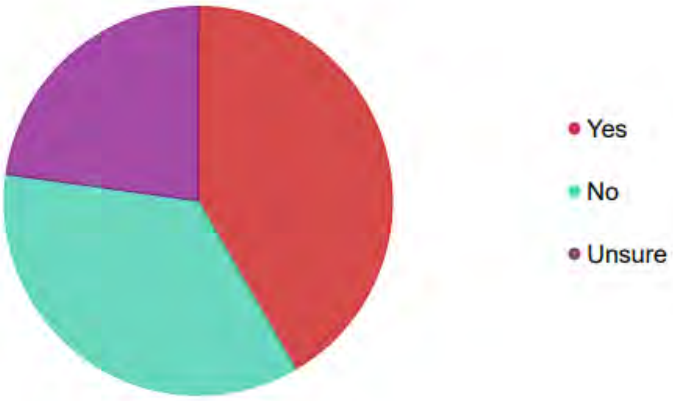


Answers	Count	Percentage
No	58	38.16%
Yes	49	32.24%
Unsure	42	27.63%

Answered: 149 Skipped: 3

DRAFT

Local Shelters

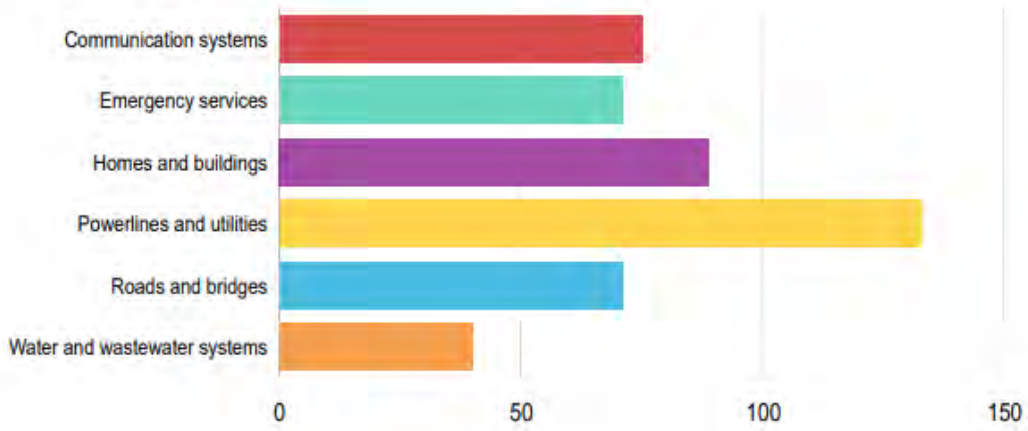


Answers	Count	Percentage
Yes	62	40.79%
No	53	34.87%
Unsure	34	22.37%

Answered: 149 Skipped: 3

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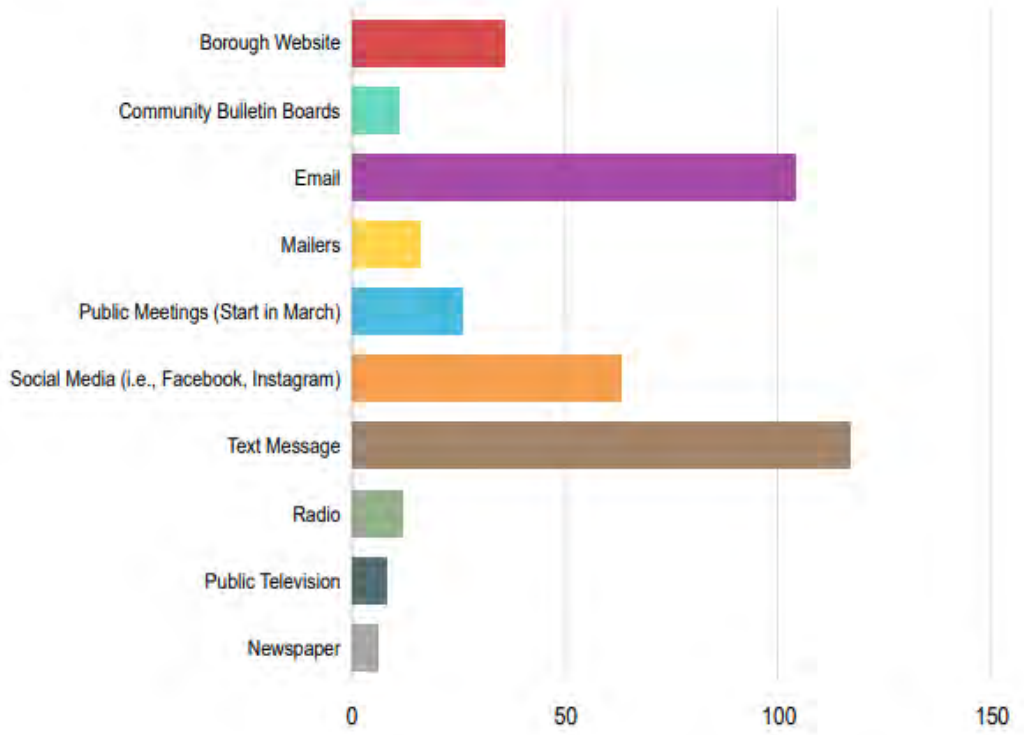
Which types of infrastructure in your area do you believe are most vulnerable to hazards?



Answers	Count	Percentage
Communication systems	75	49.34%
Emergency services access	71	46.71%
Homes and buildings	89	58.55%
Powerlines and utilities	133	87.5%
Roads and bridges	71	46.71%
Water and wastewater systems	40	26.32%

Answered: 151 Skipped: 1

What are your preferred communication methods?



Answers	Count	Percentage
Borough Website	36	23.68%
Community Bulletin Boards	11	7.24%
Email	104	68.42%
Mailers	16	10.53%
Public Meetings (Start in March)	26	17.11%
Social Media (i.e., Facebook, Instagram)	63	41.45%
Text Message	117	76.97%
Radio	12	7.89%
Public Television	8	5.26%
Newspaper	6	3.95%

Answered: 152 Skipped: 0

Results from Community Survey #1 were used to inform the Hazard Identification and Risk Assessment (Chapter 4) by validating locally perceived hazard risks and documenting community-reported impacts. Responses related to past hazard experiences, infrastructure vulnerabilities, and service disruptions informed the vulnerability assessment (Chapter 4), particularly in identifying areas of concern, impacts on critical systems, and community-specific challenges. Feedback regarding preparedness barriers, communication preferences, and access to resources was incorporated into the development of mitigation actions and public outreach strategies in Chapter 11 to ensure that proposed actions reflect community needs and improve accessibility and effectiveness.

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C.3. Community Survey #2

C.3.1 What Matters Most: Community Mitigation Survey Questions

FNSB MJ-HMP Community Survey 2

What Matters Most: Community Mitigation Survey

Thank you for returning to share your input as we continue updating the Fairbanks North Star Borough's (FNSB's) Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP). In this phase, we're asking residents to help rank mitigation priorities and provide feedback on preferred strategies, communication methods, and potential concerns related to implementation. Your insights help shape practical actions to reduce risk from hazards such as flooding, wildfire, earthquakes, severe weather, and permafrost-related impacts.

This follow-up survey focuses on community preferences, what projects matter most, what preparedness resources would be helpful, how information is best shared, and what challenges or barriers may affect mitigation efforts. Your feedback builds on earlier surveys and helps ensure the final plan reflects the needs and experiences of people who live and work in the Borough.

Thank you for taking a few minutes to guide our next steps and support a more resilient Interior Alaska.

Which location best describes your primary residence? (Please select one.)		
❒ City of Fairbanks	❒ Badger	❒ Chatanika
❒ Chena Hot Springs	❒ Chena Ridge	❒ College
❒ Eielson	❒ Ester	❒ Farmers Loop
❒ Fort Wainwright	❒ Fox	❒ Goldstream
❒ Harding-Birch Lake	❒ Murphy Dome	❒ North Pole
❒ Pleasant Valley	❒ Salcha	❒ Steele Creek
❒ Two Rivers	❒ University	❒ Himalaya / Haystack
❒ Other:		
Which best describes where you work? (Please select one.)		
❒ City of Fairbanks	❒ City of North Pole	❒ Fort Wainwright
❒ Eielson Air Force Base	❒ University of Alaska, Fairbanks	
❒ Unincorporated Borough (Outside City Limits, Bases, & University		
❒ Rural / Road-Limited Area	❒ Other	

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Rank the top five mitigation actions. **Write a number in the left column starting at 1 and finishing at 15.** (Mitigation Action: A specific project, program, policy, or activity designed to reduce or eliminate long-term risk to people, property, and the environment from identified hazards.)	
	Communications and Alerting System Upgrades
	Community Preparedness and Education Programs
	Drainage Improvements
	Earthquake Retrofits
	Energy and Power Reliability Projects
	Evacuation Route and Shelter Improvements
	Fire Service Areas/EMS Coverage
	Flood Protection
	Ground Failure and Subsidence Mitigation
	Hazardous Materials / Pipeline / Industrial Safety
	Permafrost / Cryosphere Mitigation
	Public Health and Air Quality Resilience
	Severe Weather Preparedness
	Transportation and Infrastructure Hardening
	Wildfire Mitigation
When thinking about mitigation actions, what is most important to you? (Please select up to two items.)	
	Protecting Critical Infrastructure (Roads, Utilities, Hospitals)
	Protecting Homes and Private Property
	Protecting Natural Resources
	Protecting Vulnerable Populations
	Reducing Disruption to Daily Life and Services
	Reducing Evacuation Time or Improving Access/Egress
	Reducing Response and Recovery Costs
	Other (Please Specify)
Which mitigation approaches do you generally support? (Please select all that apply.)	
	Education and Outreach Program
	Grants or Financial Incentives for Homeowners
	Natural Systems Protection (Floodplains, Buffers)
	Public Infrastructure Mitigation Projects
	Updated Building and Development Standards
	Voluntary Property Buyouts in High-Risk Areas
	Unsure

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Do you have any concerns about implementing mitigation actions? (Please select all that apply.)	
	Cost (Upfront or ongoing costs for residents, businesses, or local government.)
	Construction Impacts (Temporary disruptions such as traffic delays, noise, access limitations, or displacement.)
	Equity and Fairness (Concerns about whether mitigation actions are affordable, accessible, or fairly distributed.)
	Lack of Information or Understanding (Unclear benefits, eligibility, or how mitigation actions work.)
	Maintenance or Long-Term Upkeep (Concerns about who is responsible for maintaining mitigation projects over time.)
	Property Rights or Land Use Restrictions (Concerns about regulations or restrictions affecting private property.)
	No Concerns
What would help reduce or address these concerns? (Please select all that apply.)	
	Advance Notice and Coordination During Construction
	Clear Information on Benefits and Effectiveness
	Financial Assistance or Incentives
	Technical Assistance
	Voluntary or Phased Implementation
What would help you become better prepared? (Please select all that apply.)	
	Accessible (AFM-Friendly) Preparedness Resources
	Backup Power and Heating Options
	Communication Options During Outages
	Emergency Alerts and Warnings
	Emergency Supplies / 14-Day Kit Guidance
	Evacuation Information
	Family or Workplace Emergency Planning Resources
	Home Hardening Guidance
	Hazard-Specific Guides (Smoke, Permafrost, Extreme Cold, etc.)
	Insurance and Property Risk Guidance
	Neighborhood-Specific Hazard Maps/Information
	Shelter Locations and Pet Sheltering Information
	Training
	Volunteer Opportunities
	Workplace Exercises

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What prevents you from taking preparedness or mitigation actions right now? (Please select all that apply.)	
	Cost
	Lack of Information
	Mitigation Actions Feel Overwhelming
	Nothing Prevents Me
	Physical Limitations
	Rental Property / Lack of Authority
	Time
	Unsure What Actions Are Most Effective
Do you know where to find more information on preparedness? (Please select one.)	
☐ Yes ☐ No	
If you answered YES: Where do you typically find preparedness information? (Please select all that apply.)	
	Borough or City's Website
	Community Classes or Events
	FEMA or Ready.gov
	Friends, Family, or Coworkers
	Local Emergency Management or Fire Department
	Social Media (Facebook, Instagram, etc.)
	State of Alaska (e.g., Ready Alaska, DHS&EM)
If you answered NO: What would be the most helpful way for you to receive preparedness information? (Please select all that apply.)	
	Community Classes or Workshops
	Email or Text Alerts
	Local Events or Presentations
	News or Radio
	Printed Materials (Flyers, Brochures)
	Social Media Posts
	Website or Online Resources
If we conducted a quarterly preparedness course, would you attend? (This would be a 1-3 hour in-person or virtual class offered quarterly, focused on a specific preparedness topic, such as wildfire readiness, severe weather, evacuation planning, or household emergency preparedness. The goal would be to provide practical, actionable information participants can apply immediately.)	
☐ Yes ☐ No	

If you answered YES: What topics would you most like more information about? (Please rank from 1 to 10, with number one being your top choice.)	
	Alerts and Warnings
	Caring for Access and Functional Needs
	Caring for Pets or Livestock
	Earthquake Retrofits
	Emergency Kits and Supplies
	Evacuation Planning
	Flood Mitigation
	Generator Safety
	Wildfire Preparedness
	Winter Storms and Extreme Cold
Which communication method has worked best so far? (Please only select one.)	
	Borough Website
	Community Bulletin Boards
	Email
	Mailers
	Newspaper
	Public Meetings
	Public Television
	Radio
	Social Media (i.e., Facebook, Instagram)
	Text Messages
Which method of communication do you find least effective? (Please only select one.)	
	Borough Website
	Community Bulletin Boards
	Email
	Mailers
	Newspaper
	Public Meetings
	Public Television
	Radio
	Social Media (i.e., Facebook, Instagram)
	Text Message
Would you like to stay involved? ☐ Yes ☐ No	
If yes, please provide your preferred contact information.	

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Comments

Thank you for taking this survey. Please drop it in a designated drop box, mail it to FNSB EM (MJ-HMP), PO Box 71267, Fairbanks, AK 99707, or email it to EmergencyManagement@fnsb.gov.

You may view the plan updates at FNSB MJ-HMP.

Sign up for Emergency Alerts by texting "FNSBALERT" to 67283.

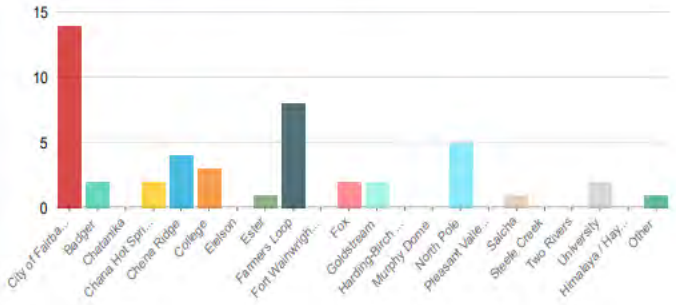
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C.3.2 What Matters Most: Community Mitigation Survey Results

47 community member responses

MJ-HMP_CS2

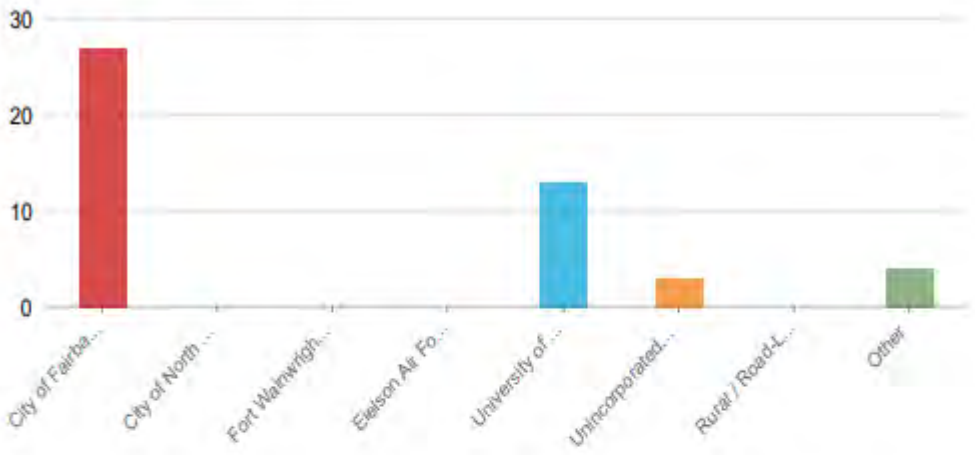
Which location best describes your primary residence? *



Answers	Count	Percentage
City of Fairbanks	14	29.79%
Badger	2	4.26%
Chatanika	0	0%
Chana Hot Springs	2	4.26%
Chena Ridge	4	8.51%
College	3	6.38%
Eielson	0	0%
Ester	1	2.13%
Farmers Loop	8	17.02%
Fort Wainwright	0	0%
Fox	2	4.26%
Goldstream	2	4.26%
Harding-Birch Lake	0	0%
Murphy Dome	0	0%
North Pole	5	10.64%
Pleasant Valley	0	0%
Salcha	1	2.13%
Steele Creek	0	0%
Two Rivers	0	0%
University	2	4.26%
Himalaya / Haystack	0	0%
Other	1	2.13%

Answered: 47 Skipped: 0

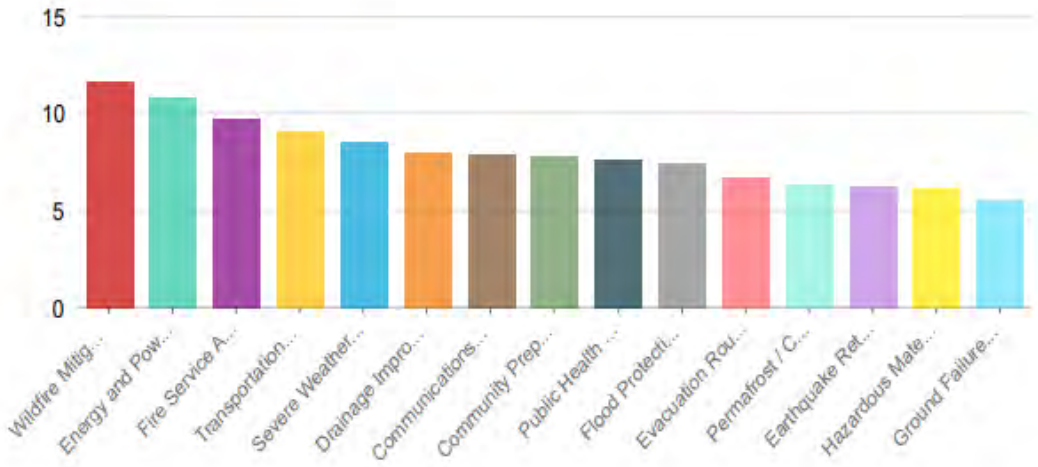
Which best describes where you work?



Answers	Count	Percentage
City of Fairbanks	27	57.45%
City of North Pole	0	0%
Fort Wainwright	0	0%
Eielson Air Force Base	0	0%
University of Alaska, Fairbanks	13	27.66%
Unincorporated Borough (Outside City Limits, Bases, & University)	3	6.38%
Rural / Road-Limited Area	0	0%
Other	4	8.51%

Answered: 47 Skipped: 0

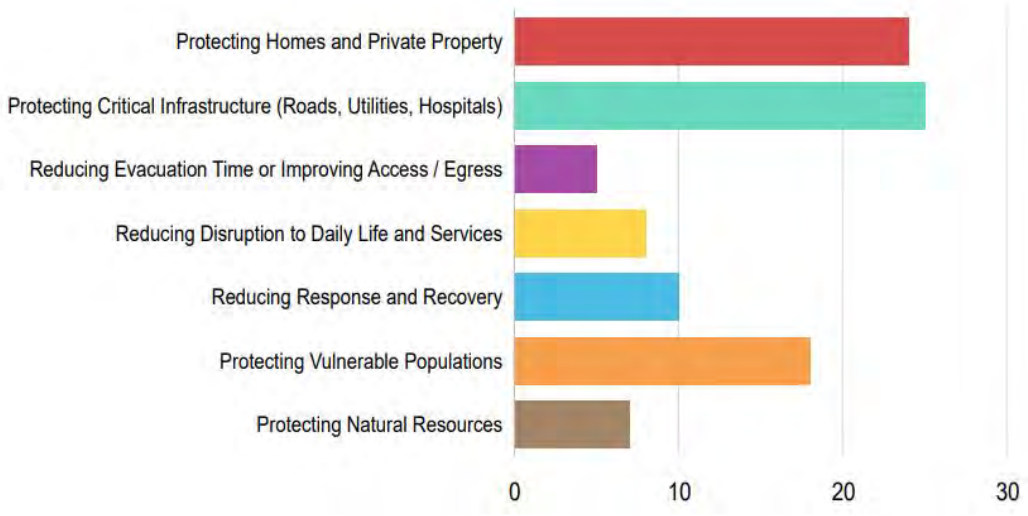
Rank the top five mitigation actions. *



Rank	Answers	1	2	3	4	5	6	Average score
1	Wildfire Mitigation	27.66% 13	25.53% 12	10.64% 5	6.38% 3	4.26% 2	0% 0	2.13% 1	11.72
2	Energy and Power Reliability Projects	25.53% 12	8.51% 4	8.51% 4	12.77% 6	8.51% 4	8.51% 4	10.89
3	Fire Service Areas/EMS Coverage	10.64% 5	12.77% 6	6.38% 3	12.77% 6	10.64% 5	2.13% 1	8.51% 4	9.79
4	Transportation and Infrastructure Hardening	10.64% 5	2.13% 1	10.64% 5	14.89% 7	2.13% 1	6.38% 3	9.09
5	Severe Weather Preparedness	4.26% 2	6.38% 3	12.77% 6	6.38% 3	12.77% 6	8.51% 4	6.38% 3	8.60
6	Drainage Improvements	2.13% 1	8.51% 4	8.51% 4	2.13% 1	12.77% 6	8.51% 4	8.04

Answered: 47 Skipped: 0

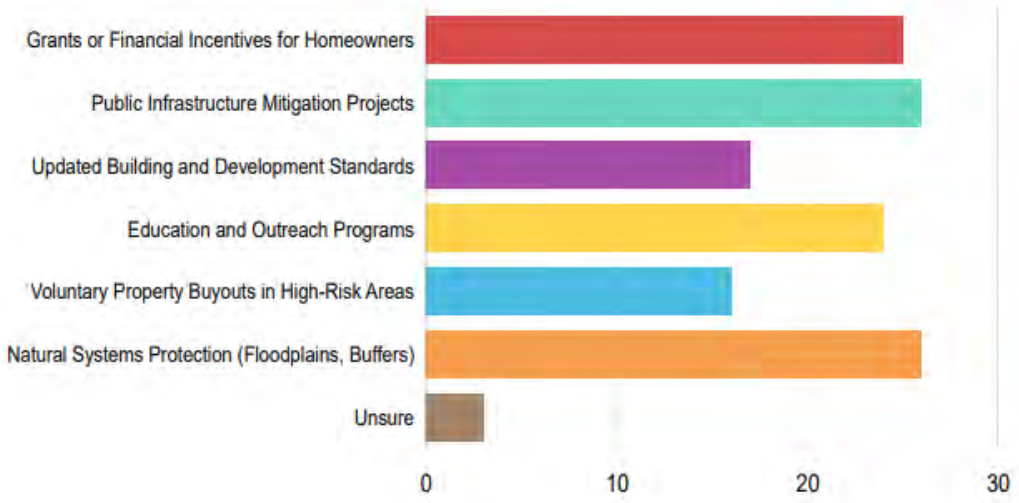
When thinking about mitigation actions, what is most important to you?



Answers	Count	Percentage
Protecting Homes and Private Property	24	51.06%
Protecting Critical Infrastructure (Roads, Utilities, Hospitals)	25	53.19%
Reducing Evacuation Time or Improving Access / Egress	5	10.64%
Reducing Disruption to Daily Life and Services	8	17.02%
Reducing Response and Recovery Costs	10	21.28%
Protecting Vulnerable Populations	18	38.3%
Protecting Natural Resources	7	14.89%

Answered: 47 Skipped: 0

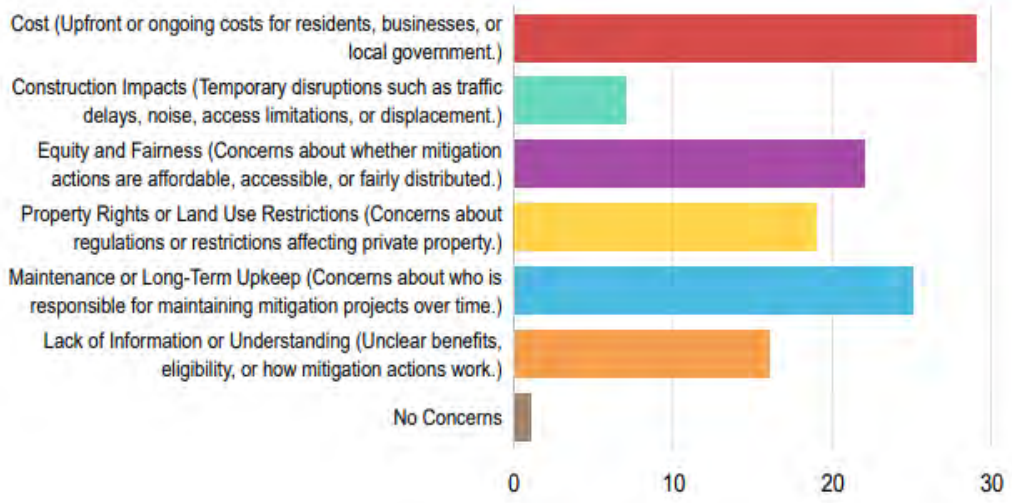
Which mitigation approaches do you generally support?



Answers	Count	Percentage
Grants or Financial Incentives for Homeowners	25	53.19%
Public Infrastructure Mitigation Projects	26	55.32%
Updated Building and Development Standards	17	36.17%
Education and Outreach Programs	24	51.06%
Voluntary Property Buyouts in High-Risk Areas	16	34.04%
Natural Systems Protection (Floodplains, Buffers)	26	55.32%
Unsure	3	6.38%

Answered: 47 Skipped: 0

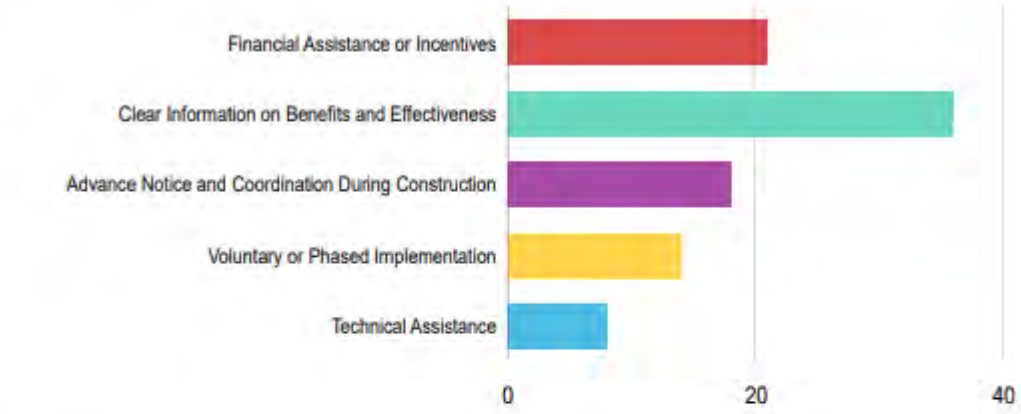
Do you have any concerns about implementing mitigation actions?



Answers	Count	Percentage
Cost (Upfront or ongoing costs for residents, businesses, or local government.)	29	61.7%
Construction Impacts (Temporary disruptions such as traffic delays, noise, access limitations, or displacement.)	7	14.89%
Equity and Fairness (Concerns about whether mitigation actions are affordable, accessible, or fairly distributed.)	22	46.81%
Property Rights or Land Use Restrictions (Concerns about regulations or restrictions affecting private property.)	19	40.43%
Maintenance or Long-Term Upkeep (Concerns about who is responsible for maintaining mitigation projects over time.)	25	53.19%
Lack of Information or Understanding (Unclear benefits, eligibility, or how mitigation actions work.)	16	34.04%
No Concerns	1	2.13%

Answered: 46 Skipped: 1

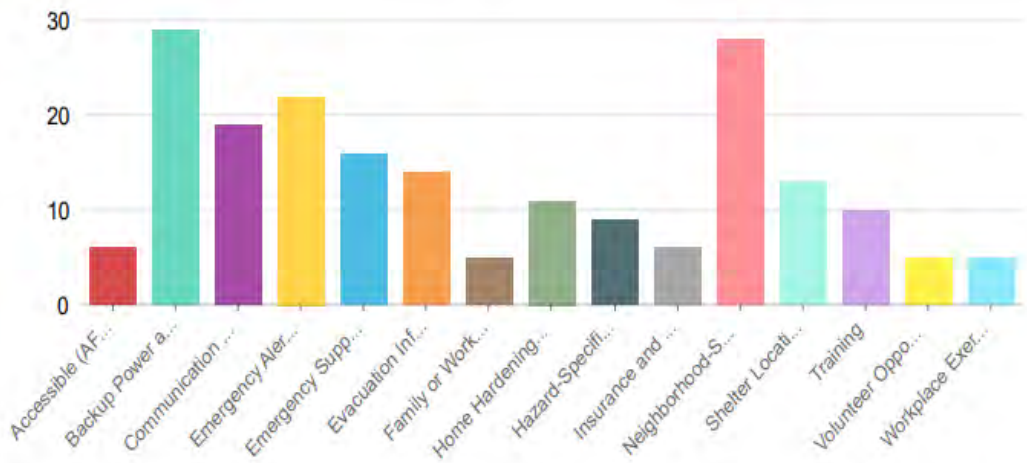
What would help reduce or address these concerns?



Answers	Count	Percentage
Financial Assistance or Incentives	21	44.68%
Clear Information on Benefits and Effectiveness	36	76.6%
Advance Notice and Coordination During Construction	18	38.3%
Voluntary or Phased Implementation	14	29.79%
Technical Assistance	8	17.02%

Answered: 44 Skipped: 3

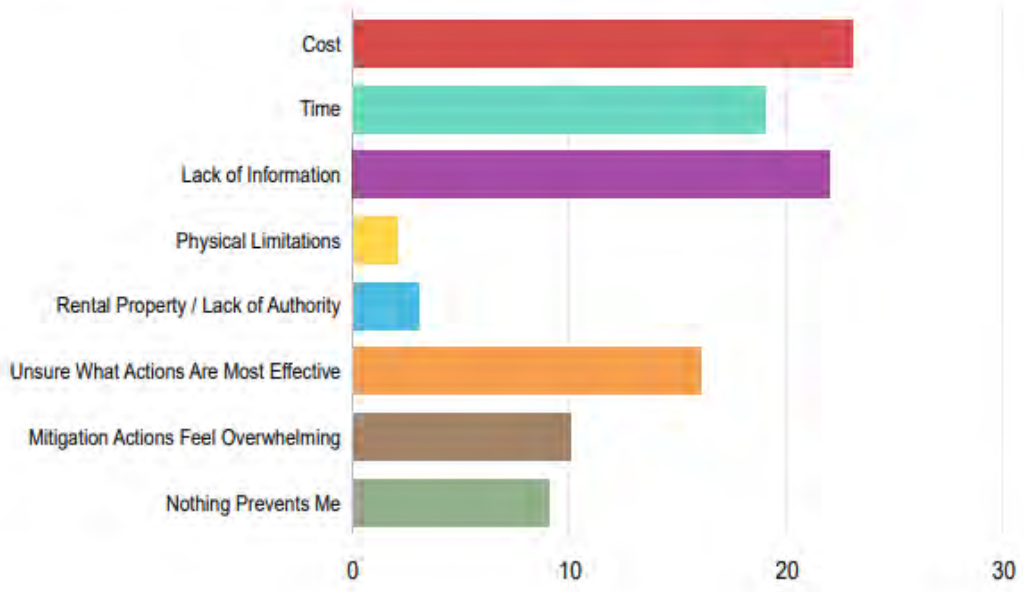
What would help you become better prepared?



Answers	Count	Percentage
Accessible (AFM-Friendly) Preparedness Resources	6	12.77%
Backup Power and Heating Options	29	61.7%
Communication Options During Outages	19	40.43%
Emergency Alerts and Warnings	22	46.81%
Emergency Supplies / 14-Day Kit Guidance	16	34.04%
Evacuation Information	14	29.79%
Family or Workplace Emergency Planning Resources	5	10.64%
Home Hardening Guidance	11	23.4%
Hazard-Specific Guides (Smoke, Permafrost, Extreme Cold)	9	19.15%
Insurance and Property Risk Guidance	6	12.77%
Neighborhood-Specific Hazard Maps/Information	28	59.57%
Shelter Locations and Pet Sheltering Information	13	27.66%
Training	10	21.28%
Volunteer Opportunities	5	10.64%
Workplace Exercises	5	10.64%

Answered: 46 Skipped: 1

What prevents you from taking preparedness or mitigation actions right now?



Answers	Count	Percentage
Cost	23	48.94%
Time	19	40.43%
Lack of Information	22	46.81%
Physical Limitations	2	4.26%
Rental Property / Lack of Authority	3	6.38%
Unsure What Actions Are Most Effective	16	34.04%
Mitigation Actions Feel Overwhelming	10	21.28%
Nothing Prevents Me	9	19.15%

Answered: 46 Skipped: 1

Do you know where to find more information on preparedness?

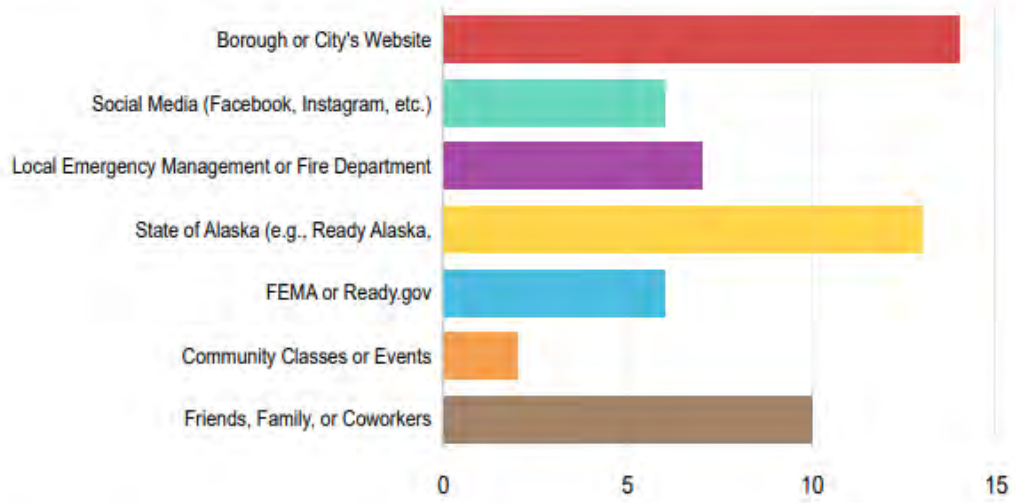


Answers	Count	Percentage
No	25	53.19%
Yes	21	44.68%

Answered: 46 Skipped: 1

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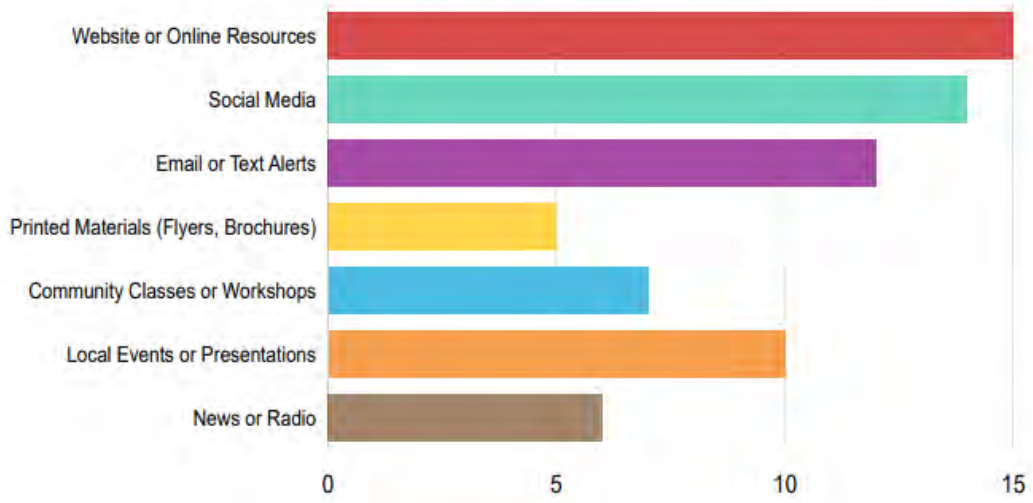
Where do you typically find preparedness information?



Answers	Count	Percentage
Borough or City's Website	14	29.79%
Social Media (Facebook, Instagram, etc.)	6	12.77%
Local Emergency Management or Fire Department	7	14.89%
State of Alaska (e.g., Ready Alaska, DHS&EM)	13	27.66%
FEMA or Ready.gov	6	12.77%
Community Classes or Events	2	4.26%
Friends, Family, or Coworkers	10	21.28%

Answered: 21 Skipped: 26

What would be the most helpful way for you to receive preparedness information?



Answers	Count	Percentage
Website or Online Resources	15	31.91%
Social Media Posts	14	29.79%
Email or Text Alerts	12	25.53%
Printed Materials (Flyers, Brochures)	5	10.64%
Community Classes or Workshops	7	14.89%
Local Events or Presentations	10	21.28%
News or Radio	6	12.77%

Answered: 25 Skipped: 22

If we conducted a quarterly preparedness course, would you attend?

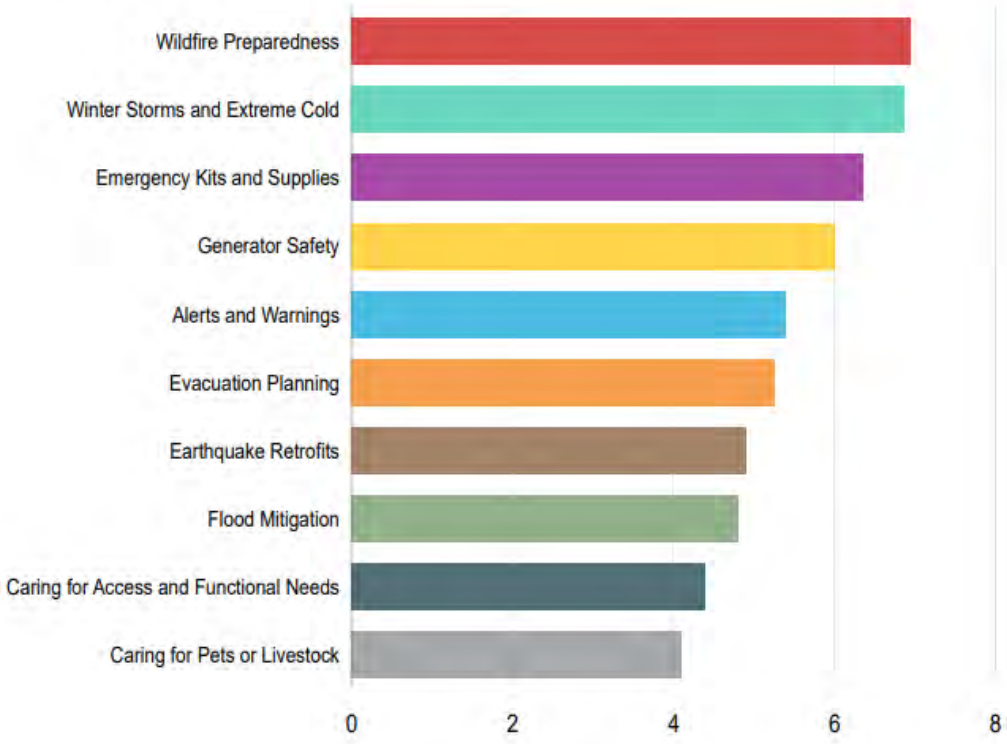


Answers	Count	Percentage
Yes	31	65.96%
No	14	29.79%

Answered: 45 Skipped: 2

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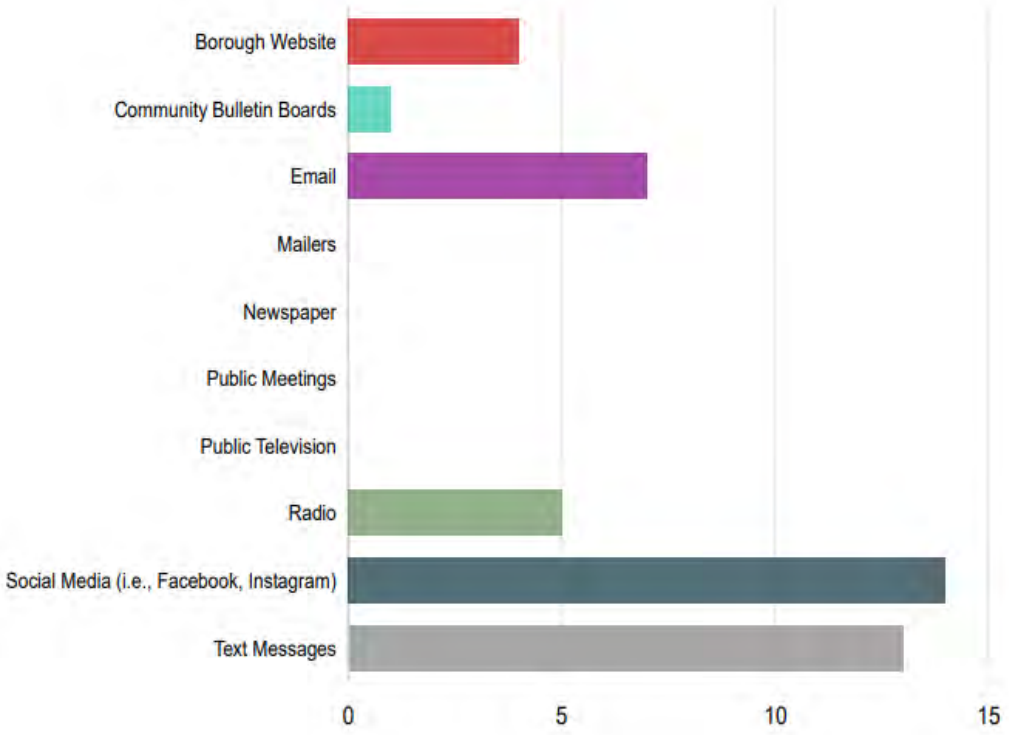
What topics would you most like more information about?



Rank	Answers	1	2	3	4	5	6	Average score
1	Wildfire Preparedness	19.35% 6	25.81% 8	6.45% 2	12.9% 4	3.23% 1	9.68% 3	3.23% 1	6.94
2	Winter Storms and Extreme Cold	16.13% 5	19.35% 6	16.13% 5	12.9% 4	12.9% 4	3.23% 1		6.87
3	Emergency Kits and Supplies	19.35% 6	12.9% 4	9.68% 3	12.9% 4	3.23% 1	12.9% 4	9.68% 3	6.35
4	Generator Safety	12.9% 4	3.23% 1	22.58% 7	9.68% 3	9.68% 3	6.45% 2	1	6.00
5	Alerts and Warnings	9.68% 3	6.45% 2	6.45% 2	12.9% 4	16.13% 5	3.23% 1	16.13% 5	5.39
6	Evacuation Planning	9.68% 3	6.45% 2	12.9% 4	3.23% 1	12.9% 4	9.68% 3	1	5.26

Answered: 31 Skipped: 16

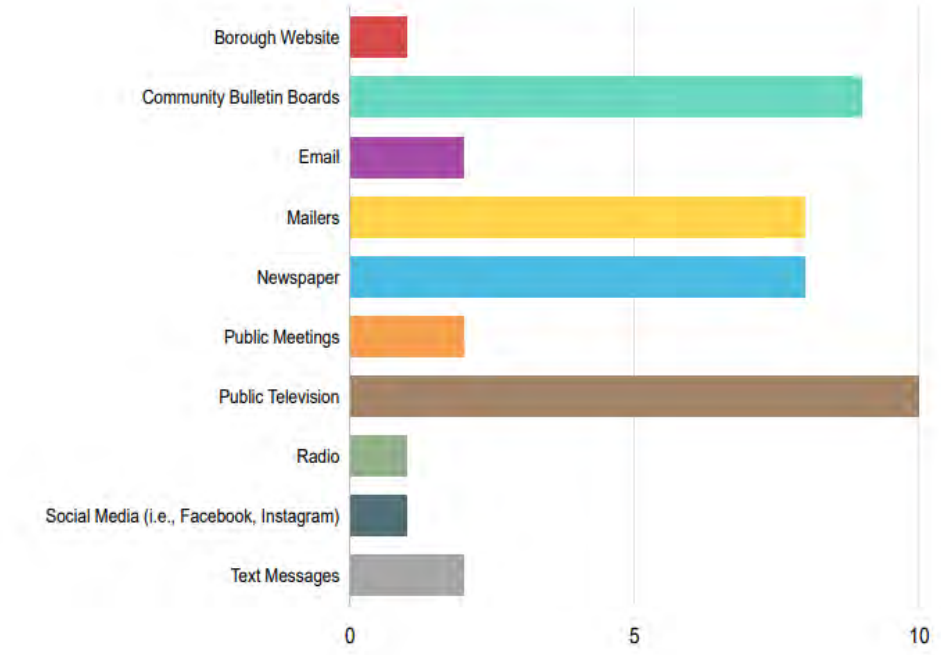
Which communication method has worked best so far?



Answers	Count	Percentage
Borough Website	4	8.51%
Community Bulletin Boards	1	2.13%
Email	7	14.89%
Mailers	0	0%
Newspaper	0	0%
Public Meetings	0	0%
Public Television	0	0%
Radio	5	10.64%
Social Media (i.e., Facebook, Instagram)	14	29.79%
Text Messages	13	27.66%

Answered: 44 Skipped: 3

Which method of communication do you find least effective?



Answers	Count	Percentage
Borough Website	1	2.13%
Community Bulletin Boards	9	19.15%
Email	2	4.26%
Mailers	8	17.02%
Newspaper	8	17.02%
Public Meetings	2	4.26%
Public Television	10	21.28%
Radio	1	2.13%
Social Media (i.e., Facebook, Instagram)	1	2.13%
Text Messages	2	4.26%

Answered: 44 Skipped: 3

Would you like to stay involved?



Answers	Count	Percentage
No	31	65.96%
Yes	13	27.66%

Answered: 44 Skipped: 3

If yes, please provide your contact information.

The word cloud requires at least 20 answers to show.

Answered: 9 Skipped: 38

Comments

The word cloud requires at least 20 answers to show.

Response	Count
What scares me the most is blue haired liberal lesbos in Subarus….	1
The third question ranking did not want to work on my phone. Here is my choices. 1-Fire service 2-wildfire mitigation 3-flood 4-drainage 5-evacuation route	1
Podcasts work well for me instead of other ways to receive information. I can select subjects I find useful, listen on my own schedule (usually on a commute) and pause when I get interrupted. And easy to share with others that I think might find them useful.	1
Please put a walking path or bike path on Phillips Field Road before someone gets hit by a vehicle!	1
My office is also available to help support efforts on earthquake preparedness, and to talk to people about the benefits of an earthquake early warning system, which would be strengthened by a more effective emergency alerting system in the borough.	1
Great idea!	1
Cannot do the rank questions on my phone	1

Answered: 7 Skipped: 40

Results from Community Survey #2 were used to support development and prioritization of mitigation actions in Chapter 11. Community rankings of mitigation strategies, preferred approaches, and identified concerns, such as cost, equity, and implementation feasibility, were incorporated into the mitigation action plan and prioritization framework. Feedback on preparedness needs, communication methods, and resource gaps informed outreach and education strategies, ensuring that mitigation actions align with community preferences and are supported by practical, accessible implementation approaches.

C.4. Community Survey #3

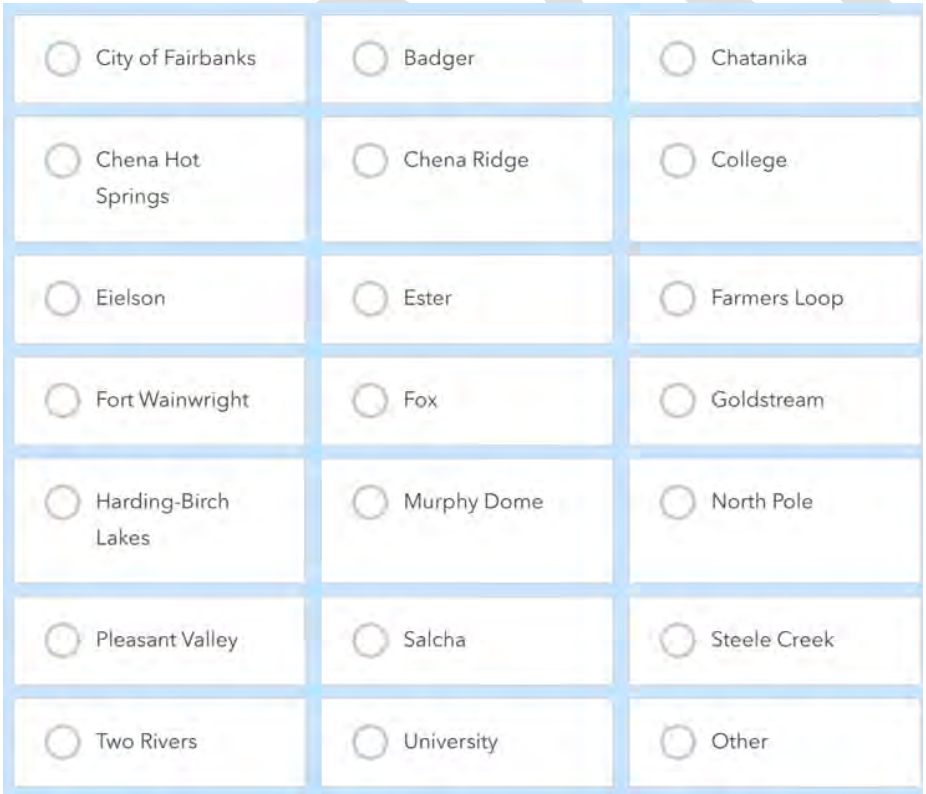
C.4.1 FNSB / MJ-HMP Hazard Ranking Questions

Multi-Jurisdiction Hazard Mitigation Plan Hazard Ranking

Please rank the following hazards from one (1) to five (5), with one being your top concern and five being the least concerning. Please do not duplicate the ranking.

Hazard	Ranking
Fire (Wildland & Urban)	
Severe Weather (Wind, Snow, Freezing Rain in Winter, Lightning, Thunderstorms)	
Flooding (Riverine, Ice Dams, Ponding, Levee Break, Dam Failure)	
Seismic (Earthquake)	
Ground Failure (Erosion, Landslides, Sink Holes, Permafrost (Cryosphere))	

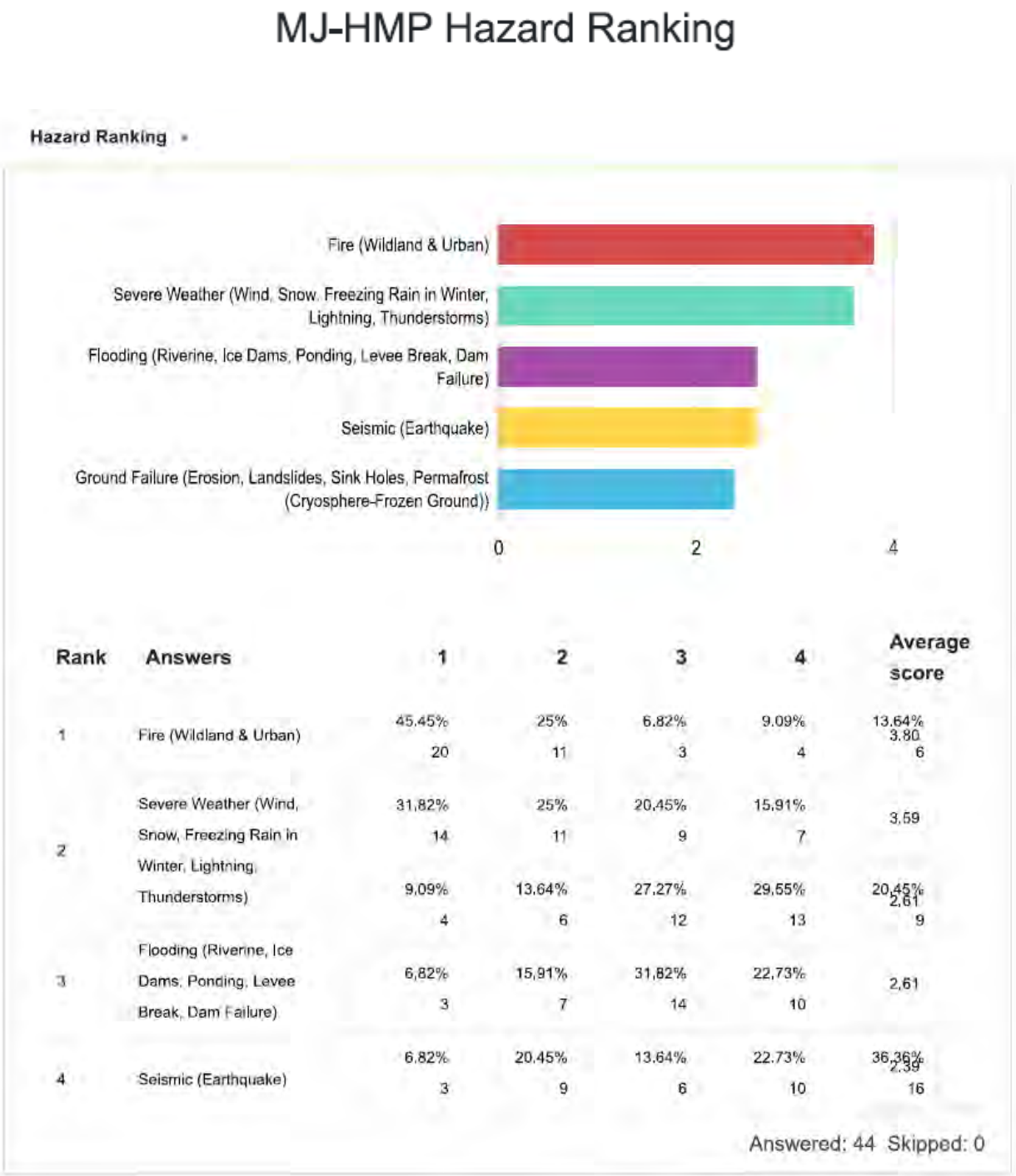
Please mark below which area is your primary residence. If other, please write in the space below:



Other:

C.4.2 FNSB / MJ-HMP Hazard Ranking Results

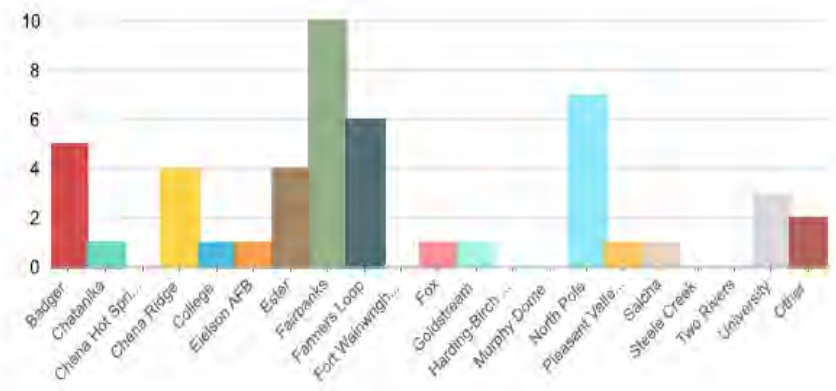
44 community member responses



Rank	Answers	1	2	3	4	Average score
1	Fire (Wildland & Urban)	45.45% 20	25% 11	6.82% 3	9.09% 4	13.64% 3.80 6
2	Severe Weather (Wind, Snow, Freezing Rain in Winter, Lightning, Thunderstorms)	31.82% 14	25% 11	20.45% 9	15.91% 7	3.59
3	Flooding (Riverine, Ice Dams, Ponding, Levee Break, Dam Failure)	9.09% 4	13.64% 6	27.27% 12	29.55% 13	20.45% 2.61 9
4	Seismic (Earthquake)	6.82% 3	15.91% 7	31.82% 14	22.73% 10	2.61
		6.82% 3	20.45% 9	13.64% 6	22.73% 10	36.36% 2.39 16

Answered: 44 Skipped: 0

Primary Residence



Answers	Count	Percentage
Badger	5	11.36%
Chatanika	1	2.27%
Chena Hot Springs	0	0%
Chena Ridge	4	9.09%
College	1	2.27%
Eielson AFB	1	2.27%
Ester	4	9.09%
Fairbanks	10	22.73%
Farmers Loop	6	13.64%
Fort Wainwright	0	0%
Fox	1	2.27%
Goldstream	1	2.27%
Harding-Birch Lakes	0	0%
Murphy Dome	0	0%
North Pole	7	15.91%
Pleasant Valley	1	2.27%
Salcha	1	2.27%
Steele Creek	0	0%
Two Rivers	0	0%
University	3	6.82%
Other	2	4.55%

Answered: 44 Skipped: 0

Results from Community Survey #3 were used to validate hazard rankings presented in the Hazard Identification and Risk Assessment (Chapter 4). Community input on relative hazard concern provided additional support for prioritizing hazards in the plan and helped confirm alignment between technical risk analysis and public perception. These findings were considered in the overall hazard prioritization process and supported the development of mitigation strategies that reflect both quantitative risk data and community priorities.

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C.5 Stakeholder Survey #1

C.5.1 Hazard Impacts and Mitigation Priorities Survey Questions

FNSB MJ-HMP Stakeholder Survey 1

Hazard Impacts and Mitigation Priorities Survey

Thank you for participating in this Stakeholder Mitigation Actions and Capabilities Survey. The Fairbanks North Star Borough is updating its Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP), a FEMA-required plan that identifies our region's major hazards and outlines strategies to reduce risk across the Borough, the City of Fairbanks, and the City of North Pole. Your organization's insight is essential to understanding vulnerabilities, operational challenges, and the resources needed to support effective mitigation actions.

This survey focuses on your sector's capabilities, priorities, and potential partnerships. Your feedback will directly inform the updated mitigation strategy and help shape practical, achievable actions that strengthen community resilience and support continuity of operations across the region.

We appreciate your time and participation in this important planning effort. All submittals are anonymous.

Which category best describes your role?

(Please select one.)

- ❒ Business Owner
- ❒ Healthcare
- ❒ Local Government
- ❒ Nonprofit
- ❒ Resident
- ❒ Utility Provider
- ❒ Other (Please Specify)

_____

List critical facilities or infrastructure that need priority mitigation.

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What barriers may prevent effective mitigation? (Please select all that apply.)	
	Coordination
	Funding
	Public Awareness
	Regulatory Constraints
	Staffing
	Technical Limitations
	Other (Please Specify)

Share early mitigation action ideas for your sector or facilities.

What resources or support would help your organization participate effectively?

Rate the Borough's current ability to reduce hazard risks.

(Please select one.)

- ❒ Not Effective
- ❒ Slightly Effective
- ❒ Moderately Effective
- ❒ Effective
- ❒ Very Effective

Explain your rating and suggest improvements.

List opportunities for collaboration or joint projects (partners, scopes).

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Thank you for taking this survey. Please drop it in a designated drop box, mail it to FNSB EM (MJ-HMP), PO Box 71267, Fairbanks, AK 99707, or email it to EmergencyManagement@fnsb.gov.

You may view the plan updates at FNSB MJ-HMP.

Sign up for Emergency Alerts by texting "FNSBALERT" to 67283.

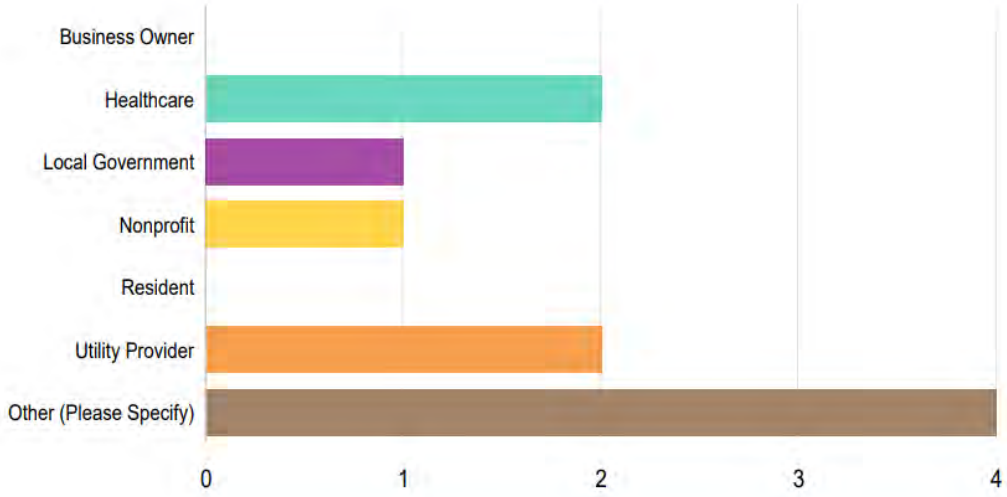
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C.5.2 Hazard Impacts and Mitigation Priorities Survey Results

10 stakeholder responses

MJ-HMP_SS1

Which category best describes your role? *



Answers	Count	Percentage
Business Owner	0	0%
Healthcare	2	20%
Local Government	1	10%
Nonprofit	1	10%
Resident	0	0%
Utility Provider	2	20%
Other (Please Specify)	4	40%

Answered: 10 Skipped: 0

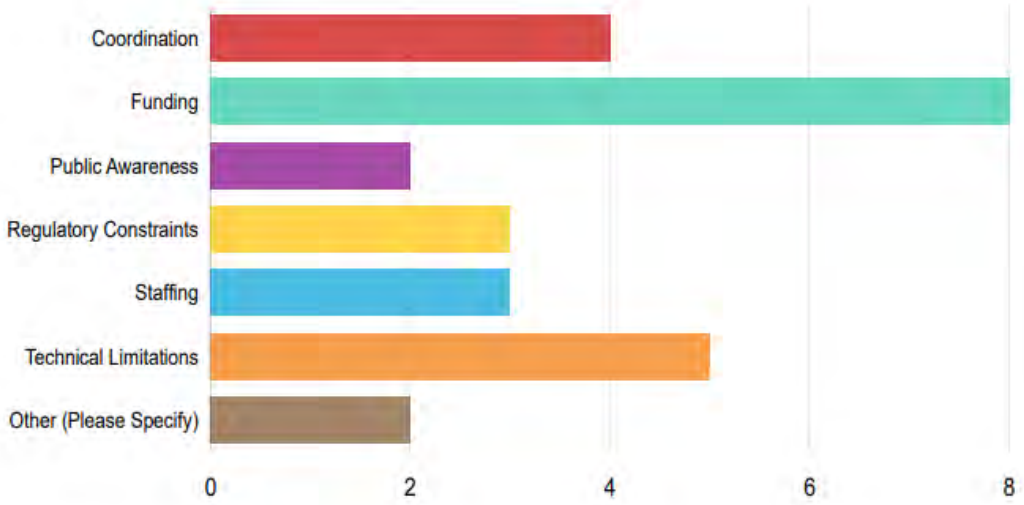
List critical facilities or infrastructure that need priority mitigation. *

The word cloud requires at least 20 answers to show.

Response	Count
Water Treatment Plant, Wastewater Treatment Plant, Multiple large lift stations, Multiple water circulating stations, Water Reservoirs, Source wells	1
UAF Power Plant and associated utility tunnels UAF Fire Station and Police Station UA Butrovich Building (DoD, 911 systems, NWS, NASA, etc) UAF Akasofu (NWS headquarters) and Elvey Building (earthquake center, tsunami warning center) UAF Dormitories UAF Physical Plant UAF BiRD and Virology Buildings (Animal Care, State Epidemiology Lab)	1
Roads and bridges need to be well maintained and clear should an evacuation need be. I think about Lahaina, HI or Ft. McMurrey BC, Canada.	1
IGU Infrastructure — Fairbanks and North Pole 3 LNG storage and vaporization facilities - one in North Pole, two in Fairbanks (sole regasification points; no pipeline alternative) 313 miles of buried natural gas distribution lines (main lines and service lines) More than 3,600 residential and commercial customers dependent on continuous gas delivery for heat, to include Fairbanks Memorial Hospital, schools, homeless shelters, correctional facilities, senior centers, govermental administrative buildings, etc. Natural gas is used by the UAF CHPP as backup fuel used for electricity/steam heat generation. Loss of any single vaporization facility during winter conditions would directly disrupt heating supply to all facilities above. The facilities are also subject to interruptions in the case of line hits.	1
Hospital, surgery center, long-term care and assisted living centers, power, water, sewer, cyber	1
Fire stations, Transportation infrastructure to include highway, Power lines & substations, Fire water and pump stations, Residential housing, Cell towers and radio communications	1
Fire department/police, eagles wings, schools, the refinery's, round about,	1
Fairbanks Memorial Hospital, Denali Center, Carlson Center (Alternate Care Site), Big Dipper (Evacuation & Temporary Staging for ACS)	1
All NSVFD fire stations.	1
-	1

Answered: 10 Skipped: 0

What barriers may prevent effective mitigation?



Answers	Count	Percentage
Coordination	4	40%
Funding	8	80%
Public Awareness	2	20%
Regulatory Constraints	3	30%
Staffing	3	30%
Technical Limitations	5	50%
Other (Please Specify)	2	20%

Answered: 10 Skipped: 0

Share early mitigation action ideas for your sector or facilities.

The word cloud requires at least 20 answers to show.

Response	Count
THE HYDRANTS	1
Seismic Retrofits consistent with ASCE7 and 41 and IBC Codes Blackstart Generators for UAF Power Plant and UAF Fire Station 11 Emergency Generator for Elvey/Akasofu	1
Most residential and commercial improvements in district are located within WUI. Funding or policy requirement for fuel treatments to structures could lessen impact of wildfire and spread of fire towards town. Increasing the number of fire water locations and fire staging areas available.	1
Moose Creek does not have working fire hydrants. NSVFD had to cap their well due to contamination. City of North Pole Utilities will not grant access to any hydrants in Moose Creek. For any structure fire a tender shuttle from City of North Pole or Eielson Airforce base is the only means of getting water. Due to contamination we can not use pond water from the surrounding area. Need for automatic transfer switch and generators for 4 of the 5 stations.	1
I'd like to assess how both those communities are similar or different to fairbanks and how an evacuation would be deployed should such a horrific quick-moving fire threaten our city (s).	1
Equipment: Acquire two mobile LNG vaporizers — one deployable to each service area — to provide redundant vaporization capacity across separated facilities. Mobile units address multiple threat scenarios: primary facility failure, buried line strike requiring section isolation and service bypass during repairs, and planned maintenance outages. Acquire one mobile generator sized for LNG facility operations to provide deployable backup power when primary backup generators fail during grid outages. IGU has experienced primary generator failure during an active power outage event, leaving a facility without any power redundancy. Infrastructure: Construct interconnection pipeline between the Fairbanks and North Pole systems to enable load balancing and service continuity during localized outages. This infrastructure would eliminate the current operational isolation between the two service areas, allowing gas to be rerouted during a facility failure or line strike.	1
Emergency generator power for Hattan Building (formerly FIBC) for imaging continuity. More MOU/MOA with other organizations for support with staffing, equipment, potentially space. Start a subcommittee under the LEPC for healthcare entities to begin building ESF #8, which would essentially be a local/borough healthcare coalition.	1
Comprehensive emergency operations plans, COOP, and recovery plans. MOUs/MOAs with other healthcare providers and resources needed. Infrastructure design and construction to withstand disasters. Infrastructure redundancy (e.g., generators, water purification, etc.)	1
Access to certain shared resources for broad based communications, construction equipment, establishing communications related to emerging risks, aid in securing community funding for increasing resilience of water/sewer infrastructure.	1

Answered: 9 Skipped: 1

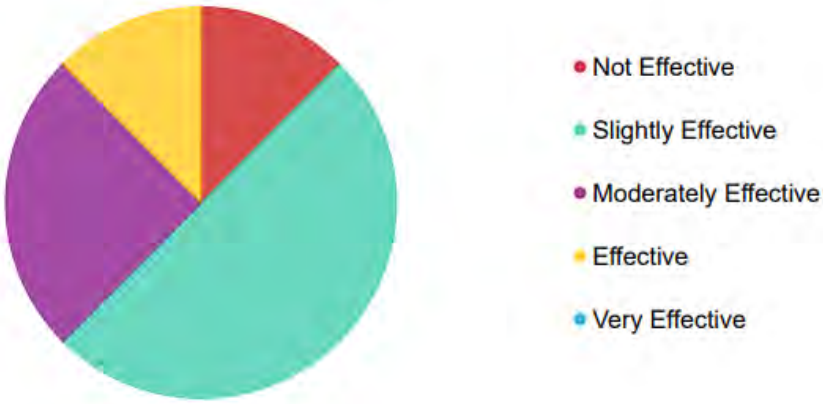
What resources or support would help your organization participate effectively?

The word cloud requires at least 20 answers to show.

Response	Count
Weather maps? NOAA? Forestry?	1
Time. Money. People.	1
THE HYDRANTS	1
Ownership of our buildings. Funding for a water supply system for Moose creek such as a buried tank for water. Access to city of north pole municipal water system	1
Ongoing coordination and communication relating to planning efforts, best practices in hazard management, known risks, community funding opportunities for improving infrastructure resilience.	1
I am not sure what this question asks - participate in what? If the question is about participating in the planning - all we need is an invite to participate.	1
Capital funding that is consistent with the risk and deferred maintenance needs of UAF	1
Addition of more fire water locations and secondary stations to Capital Improvement Plan to provide better coverage for rural areas. Support from the Borough for extension of fire districts along highways to prevent supply chain disruption. Evacuation plan for residents - no evacuation location located within district so most will need to be sent to town and some will need to be transported if they lack a vehicle.	1
Access to medical personnel beyond those locally available depending on the severity and impact of the incident	1

Answered: 9 Skipped: 1

Rate the Borough's current ability to reduce hazard risks.



Answers	Count	Percentage
Not Effective	1	10%
Slightly Effective	4	40%
Moderately Effective	2	20%
Effective	1	10%
Very Effective	0	0%

Answered: 8 Skipped: 2

Explain your rating and suggest improvements.

The word cloud requires at least 20 answers to show.

Response	Count
We seem to sit on an island north of the river with the assumption we can take care of our own. That feels a bit lonely!	1
The FNSB has contracted nearly everything away. EMS is Contracted, Fire and Rescue is contracted. The FNSB does not own all of the buildings or Equipment.	1
Pretty limited engagement with our utility and the borough to this point, although there have been increasing efforts recently.	1
I think there are a lot of things we do very well here when it comes to emergency response and it's great to see borough plans being updated. Moving towards the ESF structure is a step in the right direction for better overall coordination, it will just take time to get established so there will be lots of growing pains in the meantime. EM has been very siloed throughout the borough but it's been getting much better with partner/stakeholder participation these last couple years. It will become more effective as we learn about and hone in on everyone's capabilities.	1
I know that we, at the City, have updated our Emergency plans and I believe the Borough has done the same.	1
Currently there is not much support from the Borough for agency cooperators. One improvement would be creation of list of community resources that are available to request from other agencies in the borough. Evaluation of progress made towards objectives listed in the 2021 HMP Update would be helpful for accountability.	1
Collaboration is limited to what they know and are comfortable with. This is alienating and not inclusive for a whole community approach. They don't have to be good/great at everything, just ensure the right people are at the table and listen.	1

Answered: 7 Skipped: 3

List opportunities for collaboration or joint projects (partners, scopes).

The word cloud requires at least 20 answers to show.

Response	Count
There is an opportunity for collaboration by the Borough to connect home owners with organizations in town that may be available to provide to aid in structural fire hardening. Increasing the number of working fire tenders in the borough would also improve partnership and protection for borough residents.	1
Development of an ESF process in the EOC, integration of WebEOC with Juvare when appropriate, continue to hold and support collaborative sessions to further understand capabilities, barriers, and interdependencies.	1
Developing some kind of a borough wide utility working group to understand local capabilities and challenges, and potential for beneficial collaboration.	1
agreement with city of north pole for water in Moose Creek. Multi jurisdictional training in the area of Building Collapse, rope rescue, Wild land Fire Fighting. Expanded EMS training beyond what is currently contracted for.	1
Again, starting a subcommittee under the LEPC for healthcare entities to begin building ESF #8, which would probably function like a local/borough healthcare coalition.	1

Answered: 5 Skipped: 5

Results from Stakeholder Survey #1 were used to inform the capability assessment and the development of the mitigation strategy in Chapter 11. Stakeholders' input on critical infrastructure needs, operational challenges, and barriers to mitigation, such as funding, staffing, and regulatory constraints, was incorporated into the capability assessment and used to refine mitigation actions. Responses identifying partnership opportunities and resource needs supported development of regionally coordinated mitigation projects and strengthened alignment between local government, agencies, and community partners.

C.6 Stakeholder Survey #2

C.6.1 Mitigation Feasibility and Partnership Survey Questions

FNSB MJ-HMP Stakeholder Survey 2

Mitigation Feasibility and Partnerships Survey

Thank you for participating in this second-round stakeholder survey. As the Fairbanks North Star Borough (FNSB) continues updating its Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP), we are now gathering more detailed input on the feasibility of proposed mitigation actions and opportunities for interagency coordination and partnership. Your organization's perspective is essential to shaping actions that are realistic, technically sound, and aligned with local capabilities.

This survey focuses on identifying practical challenges, resource needs, and opportunities for collaboration to strengthen mitigation efforts across the Borough, the City of Fairbanks, and the City of North Pole. Your feedback will help refine the mitigation action plan and support projects that reduce risk, enhance operational continuity, and improve overall community resilience.

Thank you for your time and continued partnership in this important planning process.

Which draft mitigation actions does your organization support most strongly, and why?	
Which implementation challenges do you foresee? (Please select all that apply.)	
	Equipment
	Funding
	Permitting
	Public Opposition
	Staffing
	Supply Chain
	Technical Constraints

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	Other (Please Specify)

What regulatory, procedural, or technical changes would help implementation?
What data, maps, or assessments would help you understand impacts on your facilities/operations?
Are you willing to collaborate on joint mitigation projects?
❒ Yes ❒ No
If yes, with whom and on what scope?
What near-term (1–2 year) actions can your organization commit to?
Which actions should be coordinated at the Borough/Regional level rather than individually?

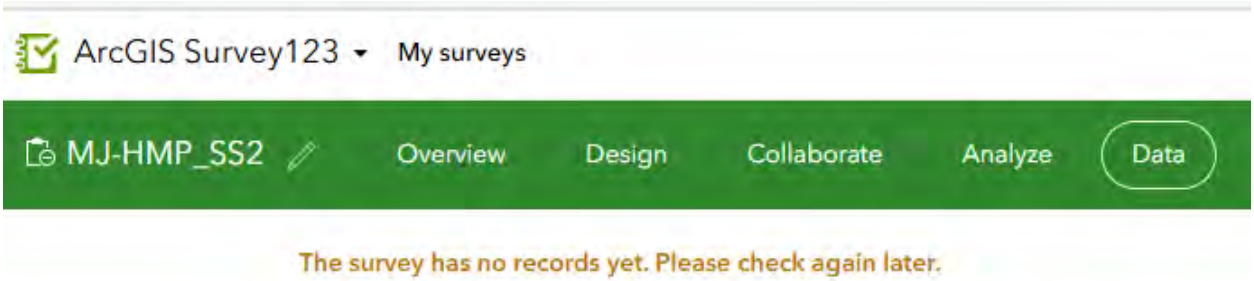
Thank you for taking this survey. Please drop it in a designated drop box, mail it to FNSB EM (MJ-HMP), PO Box 71267, Fairbanks, AK 99707, or email it to EmergencyManagement@fnsb.gov.

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Sign up for Emergency Alerts by texting "FNSBALERT" to 67283.

C.6.2 Mitigation Feasibility and Partnership Survey Results

0 stakeholder responses



No responses were received for Stakeholder Survey #2 during the distribution period. However, similar information related to mitigation feasibility, implementation challenges, and partnership opportunities was obtained through Stakeholder Survey #1, stakeholder meetings, and direct coordination with partner agencies. These combined inputs were used to refine mitigation actions in Chapter 11, with a focus on project feasibility, interagency coordination, and realistic implementation considerations.

Despite limited responses to Stakeholder Survey #2, sufficient stakeholder input was obtained through earlier surveys, stakeholder meetings, and direct coordination to support development of the mitigation strategy and ensure compliance with FEMA participation requirements.

Collectively, these survey efforts demonstrate a multi-phased public participation process that informed hazard identification, vulnerability assessment, and the development of mitigation strategies, ensuring that the MJ-HMP reflects both technical analysis and community and stakeholder input.

Collectively, the survey efforts documented in Appendix C demonstrate a comprehensive, multi-phased public participation process conducted throughout the MJ-HMP update. Input from community members and stakeholders informed all major components of the plan, including hazard identification, vulnerability assessment, and mitigation strategy development. Survey responses, combined with stakeholder meetings and ongoing coordination with jurisdictional partners, ensured that the plan reflects local knowledge, operational considerations, and community priorities. This documented process supports FEMA requirements for public involvement and demonstrates that the FNSB MJ-HMP update was developed through an inclusive, data-informed, and collaborative approach.

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Appendix D. Draft Plan Review 30-Day Public Comment Responses (May 29th to June 28th)

This appendix documents public comments received during the draft plan review period (May 29, 2026, through June 28, 2026) for the Fairbanks North Star Borough (FNSB) Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP) Update.

All comments were reviewed and evaluated by the planning team in coordination with participating jurisdictions and partner agencies. Where applicable, comments were incorporated into the final plan to improve technical accuracy, internal consistency, clarity, and alignment with community priorities and current best available data.

This appendix provides a transparent record of stakeholder and public input and demonstrates how comments were reviewed, addressed, and incorporated in accordance with FEMA requirements for plan updates (44 CFR §201.6). Responses to each comment, including resulting actions, are summarized in the table below.

Disposition Reference:

- Incorporated → Plan revised directly in response to comment
- Partially Incorporated → Comment resulted in limited or partial changes
- Addressed → Comment acknowledged and clarified; no substantial change required
- Not Incorporated → No change made (justification provided)
- Acknowledged → Comment received with no specific recommendation

ID #	Date Received	Source	Comment Summary	Disposition	MJ-HMP Planning Team Action
PC-1	05/27/26	AS Email	The reviewer noted that the Mitigation Action Plan (MAP) tables did not consistently meet FEMA requirements. Specifically, actions lacked sufficient detail to support implementation, tracking, and grant development. Missing elements included:	Incorporated	The MAP tables were comprehensively revised to meet FEMA requirements (44 CFR §201.6(c)(3)) and the 2025 Local Mitigation Planning Policy Guide. Required elements—including lead and supporting agencies, implementation actions, timeframes, prioritization considerations, and tracking components—were incorporated across all MAP tables. These updates improve implementation

ID #	Date Received	Source	Comment Summary	Disposition	MJ-HMP Planning Team Action
			• Clear identification of lead vs. supporting agencies • Defined implementation steps • Funding sources and resource considerations • Priority levels, timeframes, and measurable outcomes • Clear ownership across multiple jurisdictions and partners		clarity, accountability, and alignment with grant development and plan maintenance processes.
PC-2	05/27/26	AS Email	The reviewer noted that while transportation is correctly identified as a critical lifeline, the plan does not sufficiently address: • Specific transportation systems (highways, bridges, airport, rail) • Failure modes and dependencies • The role of transportation in cascading impacts (fuel, food, emergency response, utilities)	Incorporated	The plan was revised to strengthen the treatment of transportation as a critical lifeline and interdependent system. Revisions included: • Expanded narrative describing transportation dependencies and cascading impacts • Clarification of how transportation disruptions affect: ○ Fuel and supply delivery ○ Emergency response and access ○ Utility restoration and continuity of operations • Improved integration of transportation considerations into:

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ID #	Date Received	Source	Comment Summary	Disposition	MJ-HMP Planning Team Action
					○ Risk and vulnerability discussion (Chapter 4) ○ Infrastructure/lifeline mitigation actions (MAP tables) • Additional detail incorporated where appropriate while maintaining a public-facing level of sensitivity These updates improve alignment between identified risks and actionable mitigation planning.
PC-3	05/27/26	AS Email	The reviewer noted that the plan identifies severe weather as a high-probability hazard, but classifies its extent as "Limited," which does not reflect: • Borough-wide operational impacts • Cascading effects on lifelines (power, transportation, communications)	Incorporated	The Severe Weather hazard characterization was revised to better reflect both direct impacts and broader operational consequences. Revisions included: • Update to Table 4-2 (Hazard Frequency and Extent Summary): ○ Severe Weather extent was revised from "Limited" to "Limited to High" at both: ▪ Borough (FNSB) level ▪ Community level • Expanded discussion within the Severe Weather Hazard Profile to: ○ Better describe cascading impacts to lifelines, including power, transportation, and

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ID #	Date Received	Source	Comment Summary	Disposition	MJ-HMP Planning Team Action
					communications systems ○ Clarify that: ▪ Physical damage may often be localized ▪ Operational and system impacts can extend across the borough • Enhanced alignment between hazard profile narrative and summary risk classifications These updates ensure that the hazard extent classification reflects the full range of impacts, including both localized physical damage and broader system disruptions, consistent with FEMA risk assessment guidance.
PC-4	05/27/26	AS Email	The reviewer noted that the plan referenced 2016 SVI data as the most recent available, which is outdated given newer CDC/ATSDR datasets (e.g., 2022).	Incorporated	The Social Vulnerability Index (SVI) analysis was updated to reflect the most current available CDC/ATSDR dataset. Revisions included: • Integration of updated SVI data (2018–2022 ACS-based dataset) • Updated maps and supporting analysis in Chapter 4 • Alignment of vulnerability discussion with: ○ Current demographic trends ○ Population shifts and housing patterns • Removal of outdated language indicating that

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ID #	Date Received	Source	Comment Summary	Disposition	MJ-HMP Planning Team Action
					2016 data was the most recent These updates ensure the risk assessment reflects current social vulnerability conditions consistent with FEMA guidance.
PC-5	05/27/26	AS Email	The reviewer noted that the plan includes non-natural hazards (e.g., cyber, supply chain, LNG, active threat) but does not clearly distinguish: • FEMA-required natural hazards • Broader resilience or emergency management risks	Addressed	The plan was revised to clarify the distinction between FEMA-required hazard mitigation elements and broader resilience considerations. Revisions included: • Clear explanatory language distinguishing: ○ Natural hazards (FEMA-compliant risk assessment) ○ Non-natural hazards and resilience risks • Clarification that non-natural hazards are: ○ Included to support community resilience and emergency management planning ○ Not part of the formal FEMA hazard risk assessment • Improved alignment between: ○ Risk Assessment (Chapter 4) ○ Mitigation Strategy and MAP (Chapters 10–11) This structure ensures compliance with FEMA requirements while retaining important cross-sector risk context.

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ID #	Date Received	Source	Comment Summary	Disposition	MJ-HMP Planning Team Action
PC-6	05/27/26	AS Email	The reviewer recommended including: • Annual Review Questionnaire • Mitigation Action Progress Report as appendices rather than separate documents.	Partially Incorporated	These tools were already incorporated into Appendix A as part of the Plan Maintenance Documentation. Revisions included • Alignment of these tools with the plan maintenance process (Chapter 11) This ensures that future users can locate and apply the same tools during annual reviews and updates.
PC-7	05/27/26	AS Email	The reviewer identified issues with: • Table/figure numbering • Chapter references • Outdated or legacy content • Internal consistency across the document	Addressed	A comprehensive quality-control and editorial review was conducted prior to plan finalization. Revisions included: • Correction of: ○ Table, figure, and appendix numbering ○ Cross-references and internal links • Removal or update of legacy content from prior plan versions • Alignment of dates, datasets, and terminology throughout the document • Standardization of formatting for clarity and usability These updates improve plan readability, technical defensibility, and usability across agencies and stakeholders.
PC-8	05/27/26	JG Email	The reviewer requested that the Annual Review Questionnaire be provided as a fillable form to improve usability.	Not Incorporated	The Annual Review Questionnaire is already available as a fillable form. The version provided during the review period was distributed for stakeholder review and feedback on functionality and

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ID #	Date Received	Source	Comment Summary	Disposition	MJ-HMP Planning Team Action
					content. No changes to format were necessary.
PC-9	05/27/26	JG Email	The reviewer noted that updated SVI data is available and should be incorporated into the plan.	Incorporated	The SVI analysis was updated to reflect the most current available CDC/ATSDR dataset. Revisions included: • Integration of updated SVI data (2018–2022 ACS-based dataset) • Updated maps and supporting analysis in Chapter 4 • Alignment of vulnerability discussion with: ○ Current demographic trends ○ Population shifts and housing patterns • Removal of outdated language indicating that 2016 data was the most recent These updates ensure the risk assessment reflects current social vulnerability conditions consistent with FEMA guidance.
PC-10	05/27/26	JG Email	The reviewer noted that the acronym ICHR was not defined in Table 4-4.	Addressed	The acronym ICHR was defined as *Ignition Component Hazard Rating* within Table 4-4 and added to the plan's acronym list. This revision improves technical clarity and consistency across the document.
PC-11	05/27/26	JG Email	The reviewer requested clarification on how risk scores are calculated and what they represent.	Partially Incorporated	The risk scoring methodology was expanded within the Risk Assessment section to improve clarity and transparency. Revisions included: • Additional explanation of how hazard risk scores are developed

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ID #	Date Received	Source	Comment Summary	Disposition	MJ-HMP Planning Team Action
					• Expanded description of scoring factors and assumptions • Improved linkage between hazard scoring and vulnerability assessment While additional detail was incorporated, further simplification of the scoring methodology was limited in order to maintain technical accuracy and consistency with FEMA-aligned risk assessment approaches.
PC-12	05/27/26	JG Email	The reviewer noted issues with Table of Contents (TOC) links and navigation.	Addressed	The Table of Contents was updated to correct navigation and internal linking issues. Revisions ensured: • Accurate page references • Functional internal links (digital version) • Consistency with final document formatting These updates improve usability and navigation for both reviewers and future plan users.
PC-13	05/29/26	FC Email	The reviewer noted a reference error in the first paragraph on page 2-19.	Addressed	The incorrect reference in the first paragraph on page 2-19 was reviewed and corrected. The erroneous placeholder reference ("Error! Reference source not found.") was removed and replaced with the appropriate table citation. This revision improves document accuracy and ensures internal references are functional and consistent.
PC-14	05/29/26	FC Email	The reviewer noted that the Tanana Chiefs Conference (TCC) Chief listed in the plan was outdated and should be	Incorporated	The Tanana Chiefs Conference (TCC) leadership information was updated in Table 3-2 (Community Administration Contacts) to reflect

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ID #	Date Received	Source	Comment Summary	Disposition	MJ-HMP Planning Team Action
			updated to Sharon Hildebrand.		the current Chief, Sharon Hildebrand. This update ensures the plan reflects current leadership and maintains accuracy of partner organization information.
PC-15	06/02/26	Online Comment Form	The reviewer indicated they had reviewed the draft plan but did not provide specific comments or suggested revisions. The respondent indicated uncertainty regarding whether mitigation actions reflect community needs but did not provide additional detail or recommendations.	Acknowledged	No changes were made to the plan as no specific comments or recommendations were provided. The response was documented as part of the public outreach and engagement process, demonstrating participation in the 30-day public review period.
PC-16	06/03/26	Online Comment Form	The reviewer indicated they had reviewed the draft plan but did not provide any comments, suggested revisions, or additional mitigation actions.	Acknowledged	No changes were made to the plan as no comments or recommendations were provided. The response was recorded as part of the public comment process and contributes to documentation of stakeholder outreach and engagement.
PC-17	06/03/26	EG Email	The reviewer provided a draft ACCAP (Alaska Center for Climate Assessment and Preparedness) policy brief summarizing research on winter rain impacts in Interior Alaska and suggested it as a resource for strengthening the plan's freezing rain discussion.	Incorporated	The ACCAP winter rain policy brief was reviewed and incorporated into the plan to strengthen discussion of freezing rain and severe winter weather impacts. Revisions included: • Expanded description of winter rain (freezing rain) as a compound hazard within the Severe Weather Hazard Profile • Integration of documented impacts, including:

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ID #	Date Received	Source	Comment Summary	Disposition	MJ-HMP Planning Team Action
					○ Transportation hazards and prolonged icy road conditions ○ Power outages from snow/ice loading on infrastructure ○ Increased emergency response demand and delayed response times ○ Supply chain and delivery disruptions • Incorporation of findings from recent events (e.g., 2021 "Icemageddon") to support real-world context These updates improve the plan's ability to reflect emerging climate-driven hazards and align with current regional research and stakeholder input.
PC-18	06/03/26	EG Email	The reviewer offered continued coordination, including participation in stakeholder meetings and future technical discussion or presentation of the ACCAP research on winter rain impacts.	Addressed	The planning team coordinated with ACCAP representatives during the public comment period and incorporated relevant findings into the plan. Ongoing collaboration with ACCAP and University of Alaska Fairbanks partners will continue during plan implementation and future updates, as appropriate. This coordination supports integration of current research, emerging hazard trends, and climate-informed risk into hazard mitigation planning.
PC-19	06/05/26	EG Email	The reviewer provided updated graphics from the Alaska Center for Climate Assessment and Preparedness	Incorporated	Updated graphics provided by the ACCAP were incorporated into the plan to replace existing figures and ensure current data,

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			(ACCAP), including revised figures and updated organizational branding/logo, for use within the plan.		attribution, and organizational branding. Revisions included: • Replacement of all ACCAP-related graphics with updated versions reflecting: ○ Current datasets (through 2025–2026 where available) ○ Updated visual formatting and labeling ○ Revised organizational branding (ACCAP as a NOAA RISA team) • Integration of updated figures supporting climate and hazard trends, including: ○ Long-term temperature trends ○ Smoke and air quality indicators ○ Precipitation and climate variability ○ Increasing frequency of winter rain events These updates improve the accuracy, clarity, and consistency of climate-informed hazard data presented in the plan and ensure alignment with current research and partner agency materials. Graphic updates were coordinated with ACCAP to ensure consistency with published data and proper attribution.
PC-20	6/14/26	Online Comment Form	The reviewer expressed support for inclusion of freezing rain as a hazard and noted that	Incorporated	The recommendations and supporting information provided through the public comment form were incorporated into the plan.

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ID #	Date Received	Source	Comment Summary	Disposition	MJ-HMP Planning Team Action
			the plan accurately reflects many associated challenges and solutions. The reviewer recommended incorporating additional information and suggested language from a forthcoming ACCAP policy brief to strengthen Section 6.2.3, and requested appropriate citation if used.		Actions taken include: • Integration of ACCAP policy brief findings and suggested language into Section 6.2.3 (Freezing Rain) • Expansion of hazard characterization, impacts, and case study discussion for winter rain events • Inclusion of appropriate attribution to the Alaska Center for Climate Assessment and Preparedness (ACCAP), as applicable This comment reinforces and documents formal public submission of technical input that was also provided through direct stakeholder coordination and email correspondence.
PC-21	06/15/26	EG Email	The reviewer provided detailed technical comments, suggested language, and a full pre-publication ACCAP policy brief to strengthen the discussion of freezing rain (winter rain), particularly in Section 6.2.3 (Severe Weather – Freezing Rain).	Incorporated	Extensive updates were made to Section 6.2.3 (Freezing Rain) to incorporate the reviewer's suggested language, technical data, and supporting analysis from the ACCAP winter rain policy brief. Revisions included: 1. Expanded Hazard Characterization • Enhanced description of freezing rain as a high-impact, low-frequency hazard in the Interior • Added explanation of ice persistence throughout winter due to climatic conditions • Clarified formation processes and challenges

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ID #	Date Received	Source	Comment Summary	Disposition	MJ-HMP Planning Team Action
					associated with forecasting and mitigation 2. Integration of Documented Impacts The section was expanded to reflect real-world impacts identified in the ACCAP research, including: • Transportation disruption and prolonged hazardous road conditions • Increased emergency response demand and delayed response times • Power outages related to ice loading and vegetation impacts • School and business closures • Disruptions to delivery of essential goods and services • Wildlife impacts and human-wildlife interaction risks 3. Incorporation of Quantitative Data and Case Studies • Added supporting statistics and datasets related to: ○ Vehicle crashes during winter rain events ○ Power outage frequency and scale ○ Economic and operational impacts • Expanded discussion of historic events, including: ○ 2003 and 2010 freezing rain events

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ID #	Date Received	Source	Comment Summary	Disposition	MJ-HMP Planning Team Action
					○ 2013 State/FEMA disaster event (DR-4162-AK) ○ December 2021 "Icemageddon" compound event 4. Recognition of Compound Hazard Dynamics • Updated language to emphasize compound event risk (freezing rain + snow + wind + extreme cold) • Improved linkage between freezing rain and cascading impacts across infrastructure systems 5. Plan Consistency and Technical Alignment • Updates reflect comparison and advancement from Draft 2 to Draft 3, ensuring: ○ Improved technical depth ○ Stronger alignment with current research and stakeholder input ○ Consistency across hazard profiles and climate-informed risk discussion These updates substantially strengthen the plan's treatment of freezing rain and align with FEMA guidance to incorporate best available science, recent data, and locally relevant hazard impacts. Revisions also improved consistency between the Severe Weather Hazard Profile and

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ID #	Date Received	Source	Comment Summary	Disposition	MJ-HMP Planning Team Action
					broader climate trends discussed in the Risk Assessment.

Summary of Public Comment Outcomes

A total of 21 public comments were received during the 30-day review period through agency coordination, stakeholder email submissions, and the online public comment form. These comments reflect input from technical partners, subject matter experts, and members of the public.

Overall, the comment process resulted in substantive improvements to the plan, particularly in the following areas:

- Mitigation Action Plan (MAP) Enhancement: Comprehensive revisions were made to ensure FEMA compliance, including clearer identification of responsible agencies, implementation steps, prioritization, and funding considerations.
- Hazard Characterization and Risk Assessment: Updates strengthened hazard profiles (notably severe weather and freezing rain), improved consistency between risk narratives and classifications, and enhanced treatment of cascading impacts to critical lifelines.
- Integration of Current Data and Research: The plan was updated to incorporate the most recent Social Vulnerability Index (SVI) data and climate research, including technical contributions and datasets from the Alaska Center for Climate Assessment and Preparedness (ACCAP).
- Climate and Emerging Hazard Context: Expanded discussion of compound and climate-driven hazards (e.g., winter rain events) improved alignment with current regional trends and best available science.
- Plan Clarity, Organization, and Usability: Editorial and quality-control updates addressed formatting, numbering, cross-references, navigation, and overall document consistency.
- Coordination and Partner Engagement: Comments from state, academic, and regional partners strengthened technical accuracy and reinforced ongoing collaboration for implementation and future updates.

Approximately:

- ~60% of comments were fully incorporated, resulting in direct plan revisions

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- ~15% were partially incorporated
- ~20% were addressed through clarification or editorial correction
- A small number were not incorporated or acknowledged, primarily where no change was needed, or no actionable recommendation was provided

No adverse or conflicting public comments were received that required significant policy changes or dispute resolution.

Collectively, the public comment process improved the technical quality, FEMA compliance, and implementability of the MJ-HMP Update, while documenting meaningful stakeholder and public engagement consistent with federal planning requirements.

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Sponsored by: Councilmember Cleworth
Date: August 24, 2026

RESOLUTION NO. 5230

A RESOLUTION TO REOPEN LACEY STREET BETWEEN FIRST AVENUE AND SECOND AVENUE BY SEPTEMBER 30, 2026

WHEREAS, Lacey Street, between First and Second Avenue, was temporarily closed this summer to accommodate proposed renovation of the Ice Museum and also to help the Starter Block project; and

WHEREAS, the street was turned into a skateboard park and barricaded off; and

WHEREAS, with the advent of winter coming it is desirable to reopen Lacey Street to through traffic and make it available for emergency vehicles by providing direct access when needed; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF FAIRBANKS, ALASKA, as follows:

Section 1. That Lacey Street be reopened by September 30, 2026, and the traditional traffic pattern be restored on this public street.

Section 2. That this resolution is effective six days after adoption.

_____
Mindy O'Neall, Mayor

AYES:
NAYS:
ABSENT:
APPROVED:

ATTEST:

_____
D. Danyielle Snider, MMC, City Clerk

APPROVED AS TO FORM:

_____
Thomas A. Chard II, City Attorney

Sponsored by: Mayor O'Neall
Date: August 24, 2026

RESOLUTION NO. 5231

A RESOLUTION AUTHORIZING THE CITY OF FAIRBANKS TO APPLY FOR FUNDS FROM THE OFFICE ON VIOLENCE AGAINST WOMEN (OVW) FOR THE FFY2026 LOCAL LAW ENFORCEMENT GRANTS FOR ENFORCEMENT OF CYBERCRIMES PROGRAM

WHEREAS, the City of Fairbanks has been notified by the Office on Violence Against Women (OVW) that the City is eligible to apply for the Local Law Enforcement Grants for Enforcement of Cybercrimes Program to strengthen the investigation and prosecution of cybercrimes against individuals; and

WHEREAS, the Fairbanks Police Department plans to use the funds for a 3-year contract for digital forensics software subscription and training totaling $453,675; and

WHEREAS, the City of Fairbanks plans to request $453,675, and no match is required.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF FAIRBANKS, ALASKA, as follows:

Section 1. The Mayor or their designee is authorized to execute any and all documents required for requesting funds on behalf of the City for the FFY2026 Local Law Enforcement Grants for Enforcement of Cybercrimes Program.

Section 2. This resolution is effective six days after adoption.

_____
Mindy O'Neall, Mayor

AYES:
NAYS:
ABSENT:
APPROVED:

ATTEST:

_____
D. Danyielle Snider, MMC, City Clerk

APPROVED AS TO FORM:

_____
Thomas A. Chard II, City Attorney

CITY OF FAIRBANKS
FISCAL NOTE

I. REQUEST:

Ordinance or Resolution No: 5231

Abbreviated Title: FY2026 Local Law Enforcement Grants for Enforcement of Cybercrimes Program

Department(s): FPD

Does the adoption of this ordinance or resolution authorize:

1) additional costs beyond the current adopted budget? Yes ____ No X

2) additional support or maintenance costs? Yes ____ No X

If yes, what is the estimate? see below

3) additional positions beyond the current adopted budget? Yes ____ No X

If yes, how many positions? ____

If yes, type of positions? ____ (F - Full Time, P - Part Time, T - Temporary)

II. FINANCIAL DETAIL:

PROJECTS:	Contract	Equipment	Personnel	Total
Digital forensics software subscription & training (3-year contract)	$453,675			$453,675
				$0
				$0
				$0
				$0
TOTAL	**$453,675**	**$0**	**$0**	**$453,675**

FUNDING SOURCE:	Contract	Equipment	Personnel	Total
Grant Fund (Federal)	$453,675			$453,675
				$0
				$0
TOTAL	**$453,675**	**$0**	**$0**	**$453,675**

The City of Fairbanks will request funds for digital forensics software subscription for three years ($426,300) and training ($27,375) totaling $453,675. To retain the software after three years, the annual subscription cost will be at least $142,034.

Reviewed by Finance Department: Initial jp Date 8/19/2026

Sponsored by: Mayor O'Neall
Date: August 24, 2026

RESOLUTION NO. 5232

A RESOLUTION AUTHORIZING THE NEGOTIATION OF THE REDEVELOPMENT AT 123 LACEY STREET

WHEREAS, the former Polaris Building site is a prominent, City-owned property in downtown Fairbanks and represents a key opportunity for private reinvestment and economic activity; and

WHEREAS, the City of Fairbanks seeks to encourage development that is financially viable, constructible in Interior Alaska conditions, and capable of long-term operation without reliance on ongoing public subsidies; and

WHEREAS, redevelopment of the site is intended to support a safe, active, and well-maintained downtown environment that serves residents, businesses, and visitors year-round; and

WHEREAS, the City has prepared a Request for Proposals (RFP) to solicit qualified development teams and establish a fair, competitive process for project evaluation and selection; and

WHEREAS, The Urban Coalition, in partnership with Fairbanks Neighborhood Housing Services and Bettisworth North, submitted the only proposal to the RFP; and

WHEREAS, an evaluation committee with representatives from the City of Fairbanks, Downtown Association of Fairbanks, Cold Climate Housing Research Center, Fairbanks Area Surface Transportation, and Explore Fairbanks determined the proposal was advantageous or potentially advantageous to the City; and

WHEREAS, the City of Fairbanks intends to enter negotiations with the proposers for the redevelopment at 123 Lacey Street.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF FAIRBANKS, ALASKA, as follows:

SECTION 1. The Mayor or Mayor's designee is authorized to enter negotiations with the proposers for the redevelopment at 123 Lacey Street.

SECTION 2. Any subsequent transfer, sale, or lease of property associated with the negotiation will require an ordinance of the City Council.

SECTION 3. The effective date of this resolution is six days after adoption.

_____
Mindy O’Neall, Mayor

AYES:
NAYS:
ABSENT:
ADOPTED:

ATTEST:

_____
D. Danyielle Snider, MMC, City Clerk

APPROVED AS TO FORM:

_____
Thomas A. Chard II, City Attorney